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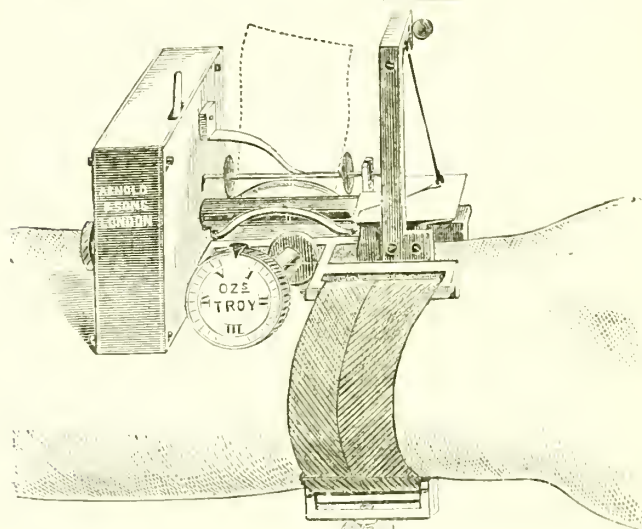
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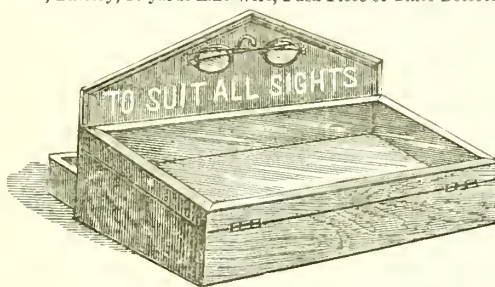
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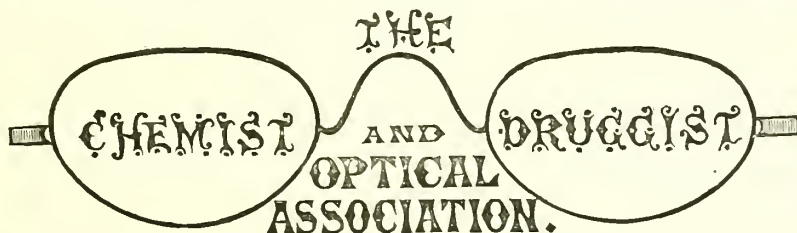
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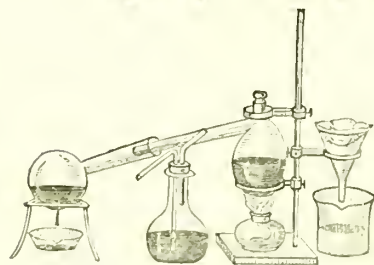
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IMPROVED
FLUID EXTRACT OF

Annatto

For imparting a rich
and beautiful colour to
Butter and Cheese.

Is guaranteed to be prepared from the pure colouring ingredient of the Spanish Annatto. Chemical Analysis and recent investigation prove that it possesses the highest degree of colouring power, perfectly clear, and a superior and brilliant tint.

WARREN'S GENUINE "SWEET" ESSENCE OF RENNET

McMASTER, HODGSON & CO., DUBLIN, Copyright Proprietors and Sole Manufacturers.

CAUTION.—None genuine unless the Copyright Proprietors' Name—McMASTER, HODGSON & CO.—is on each label.

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ROWLAND'S TOILET ARTICLES,

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Have been known for the last 80 years all over the world, and being well advertised, and always finding a ready sale, are well worthy the attention of Chemists, Druggists, and Storekeepers.



ROWLAND'S MACASSAR OIL

Is universally held in high repute for its unprecedented success during the last 80 years in promoting the growth, restoring, improving, and beautifying the human hair. It prevents hair from falling off or turning gray, strengthens weak hair, cleanses it from scurf and dandruff, and makes it beautifully soft, pliable, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair, while its introduction into the nursery of Royalty is a sufficient proof of its merits. Sizes, 3s. 6d., 7s., 10s. 6d. (equal to four small), and 21s. per bottle.



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Is a most refreshing preparation for the Complexion, dispelling the cloud of languor and relaxation, allaying all heat and irritability, and immediately affording the pleasant sensation attending restored elasticity and healthful state of the skin. Freckles, Tan, Spots, Pimples, Flashes, and Discoloration fly before its application, and give place to delicate clearness, with the glow of beauty and of bloom. In cases of sunburn, or stings of insects, its virtues have long been acknowledged. Price 4s. 6d. and 8s. 6d. per bottle.

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Or PEARL DENTIFRICE is of inestimable value in preserving and beautifying the teeth, strengthening the gums, and giving a pleasant fragrance to the breath; it eradicates tartar from the teeth, prevents and arrests decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. Its unprecedented success for more than half a century shows the universal favour in which it is held, while the fact of its being entirely free from any acid or mineral ingredients constitutes it the safest and purest tooth powder ever used.

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Is a new and fragrant Toilet Powder, specially recommended to ladies. Each box has inside the lid a certificate of purity from Dr. REDWOOD, Ph.D., F.C.S. 2s. 6d. per box.

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Transparent Glycerine Soap,

In registered Packets of three Tablets, and in oval Tablets in paper. Warranted to contain 33% of the purest Glycerine.

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Best preventive against chapped hands, and unrivalled for imparting softness to them, and rendering them clean and white. See Testimonials of Professor J. von Liebig, Baron; and of Professor F. Wöhler.

Sarg's Double Distilled Glycerine, Chemically Pure,

In $\frac{1}{2}$ lb. and 1 lb. Bottles, should have a place in every nursery on account of its salutary action on the heads of children, relieving them from dandruff, and the roughness of the scalp they are so commonly subject to.

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In Boxes of three Tablets, is highly recommended as a most effective disinfection.

GLYCERINE, CHEMICALLY PURE.

SARG'S DISTILLED CHEMICALLY PURE GLYCERINE, 29° Beaumé, in Cases of Four 56-lb. Tins each.

SARG'S DOUBLE DISTILLED GLYCERINE, Chem. pure, 30° Beaumé, in Cases of Four 56-lb. Tins each; Twenty 5-lb. Bottles, Fifty 1-lb. Bottles, and 100 $\frac{1}{2}$ -lb. Bottles, with Registered Label.

SOLD BY ALL WHOLESALE CHEMISTS AND DRUGGISTS.

SOLE WHOLESALE AGENTS FOR THE UNITED KINGDOM AND THE COLONIES,

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SILVER MEDAL,



PARIS, 1878.

THE

Tin-Plate Decorating Co.,

MANUFACTURERS OF THE NEW

CRYSTALLIZED TIN BOXES,

FOR TOILET AND OTHER PURPOSES.

GOLD MEDAL,



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SEAMLESS DECORATED TIN BOXES,

Suitable for Blacking, Polishing Paste, Tooth Powder, Pomade, Pills, Lozenges, &c.

DECORATED TIN CANISTERS,

For Disinfectant Powder, Baking Powder, &c., &c., &c.

WORKS: NEATH, SOUTH WALES.

THE UNIVERSAL TOOTHACHE SYRINGE

Retail,
6d. each.Wholesale,
4s. per dozen.

Is a great improvement upon the "DENTAL SYRINGE," as the fluid is contained in a glass bulb, which enables its contents to be seen, also prevents the liability to evaporation through long keeping or exposure.

THE UNIVERSAL CORN AND WART PENCIL.

1 doz. mounted on a handsome Illustrated Show-Card, Retail, 6d. each; Wholesale, 3s. 6d. per doz. It is especially adapted for Export Trade, and may be safely sent to the hottest climates, as each glass tube is hermetically sealed and enclosed in a cardboard case.

N.B.—Both the above are exempt from Stamp Duty by permission of the Board of Inland Revenue.

CONCENTRATED WATERS.—One Ounce of these Waters added to Forty Ounces of Distilled Water forms a clear Medicated Water (without filtering), similar in every respect to those prepared according to the directions of the British Pharmacopœia, and free from all Chemical impurity. They are prepared to supply a want long felt by Chemists and Medical Men, and by their new fresh supply of any of the Medicinal Waters may be obtained at a moment's notice. They are not affected by age in any climate. N.B.—Used in the proportion of one part to thirty-two of water they represent the Medicinal Waters of the United States Pharmacopœia.



	Per lb.		Per lb.		Per lb.		Per lb.
Aqua Anethi, Concent.	4/0	AquaCinnam.Ver.Concent.	6/0	Aqua Fœniculi, Concent.	4/0	Aqua Pimentæ, Concent.	4/0
" Anisi, "	4/0	" Cassiæ "	4/0	" Menth. Pip. "	4/0	" Rosæ "	8/6
" Camphoræ "	4/0	" Flor. Aurant. "	8/6	" Ang. Con. 6/0	" "	" Rosæ Virgin "	10/6
" Carui "	4/0	" Flor. Sambuci "	8/6	" Virid. "	4/0		

The above are put up in Bottles of 1lb. or 1lb. and upwards, each of which has the Inventor's Protection Label over cork.

Wholesale Agents—Hearon & Co., Maw, Son, & Thompson, Lyneh & Co., London; Evans, Sons & Co., Rames Liverpool; Woolley, Manchester; Bewley & Draper, Hunt & Co., Dublin; Glasgow Apothecaries' Co., Hatrick & Co., York. Special terms for large quantities may be had from

B. ROBINSON, Distiller and Brewer of British Wines, Church St., Pendleton, Manchester.

SANDS' STANDARD DYES

Are the First and the Best; the Finest Dye and largest Package. 1d. Packets, on Cards, at 7/ per gross; and 3d. and 6d., in very neat Counter Cases, with sloping Glass Lid, containing $\frac{1}{2}$ gross 3d. and $\frac{1}{4}$ gross 6d., assorted colours—the 3d. at 21/ per gross, and 6d. at 42/ per gross. No charge for Case.

SANDS' GOLD PAINT.

Retails at 1/ complete, containing, in box, Gold Powder, Mixing Liquid, Brush, and Palette. 8/ per dozen. Finds a ready sale everywhere, being applicable to so many purposes which suggest themselves.

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PRICE LISTS OF OTHER GOODS SENT FREE ON APPLICATION ENCLOSING TRADE CARD.
All Goods bear a handsome profit, and any unsaleable exchanged.

SANDS MANUFACTURING COMPANY,
121 GOSWELL ROAD, LONDON, E.C.

SPONGES!



GOLD MEDAL AWARDED,
BRUSSELS EXHIBITION, 1881,



TO

R. CRESSWELL & CO.,

SPONGE MERCHANTS & IMPORTERS,

32 Red Lion Square, London;

AND AT PIRÆUS AND SMYRNA.

ESTABLISHED 1850.

Messrs. R. C. & Co. having secured their supplies on the Fisheries for the year 1882, previous to the general advance of 10 to 15 per cent. in prices, are enabled to maintain their last year's quotations.

PRICES CURRENT OF SANDED AND SANDLESS SPONGES, IN ORIGINAL CASES AS IMPORTED.

HONEY-COMB SPONGES.

No.	Qty.		Pieces in case about	Price case. £ s. d.
1	1st	Finest selected shapes, assorted sizes	130	12 0 0
2	1st	Do. do.	75	7 0 0
3	1st	Do. do.	45	4 0 0
4	1st	Small selected shapes	275	7 0 0
5	1st	Superior do. large Bath sizes	25	7 0 0
6	2nd	Do. quality shapes, assorted sizes... ..	125	8 0 0
7	2nd	Do. do. do.	75	4 4 0
8	2nd	Good quality shapes, small ...	275	3 10 0
9	2nd	Do. do. large Bath sizes	25	5 0 0
10	3rd	Do. do. assorted sizes ...	145	5 5 0
11	3rd	Do. do. do.	90	3 10 0
12	3rd	Do. do. large Bath sizes	25	3 0 0
13	4th	For Stable use, &c.	125	1 5 0

FINE TURKEY SPONGES.

14	1st	Finest selected Cups, assorted sizes	110	18 0 0
15	1st	Do. do. do.	55	10 0 0
16	1st	Do. do. Bath sizes	35	12 0 0

Fine Turkey Sponges—continued.

No.	Qty.		Pieces in case about	Price case. £ s. d.
17	2nd	Superior Cups, assorted sizes ...	110	12 0 0
18	2nd	Do. do.	55	7 0 0
19	2nd	Do. Bath sizes	35	9 0 0
20	3rd	Fine Cups, assorted sizes	110	9 0 0
21	3rd	Do. do.	65	5 5 0
22	3rd	Do. Bath sizes	35	7 0 0
23	1st	Turkey Solids, assorted sizes ...	115	7 0 0
24	2nd	Do. do.	110	5 10 0
25	1st	Flat Saddle, assorted sizes ...	55	9 10 0
26	1st	Do. do.	35	6 0 0
27	2nd	Do. do.	55	6 5 0
28	2nd	Do. do.	35	4 0 0

BROWN TURKEY SPONGES.

29	1st	Finest selected, assorted sizes ...	140	4 10 0
30	1st	Do. do.	75	2 15 0
31	2nd	Superior quality. do.	140	3 3 0
32	2nd	Do. do.	75	2 0 0
33	3rd	Slate quality. do.	350	1 1 0

The above may be had Sanded or Sandless, as required.

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WHOLESALE AND EXPORT

PATENT MEDICINE VENDORS,

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QUEIN'S PEPTIC FOOD SOLVENT,

THE GREAT INDIAN TONIC SHERBIT.

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G. F. SNOOK & SON,

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GENUINE Brown Arnicated Felt Corn and Bunion Plasters. SUPERIOR White Spread Felt Corn and Bunion Plasters.

FELT CHEST PROTECTORS. FELT CHEST AND LUNG PROTECTORS.

Chamois and Flannel Chest and Chest and Lung Protectors. Turkish Toilet and Bath Gloves in all New Patterns. Bath Straps and Sponge Pads.

Waterproof Sponge Bags, Bathing Caps, Nursing Aprons, &c.

Before you Order, send for Price List. Please Note the Address.

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DELECTABLE JUJUBES, VOICE JUJUBES, AND GLYCERINE PASTILLES,

Put up in 4-lb. Decorated Tins with Glass Lids, *TINS FREE* are now being inquired for by buyers from all parts of the world. They are not surpassed in quality by any maker, and give entire satisfaction.

MEDICATED and HIGH-CLASS LOZENGES, of every kind.

Sent out in 2-lb. or 4-lb. Bottles, Bottles Free; or in Tins, from 10 lb. upwards.

LIME JUICE TABLETS, THIRST QUENCHERS.

ACID DROPS, AND BEST QUALITY BOILED SUGARS OF EVERY KIND.

GIBSON'S ORIGINAL CHLORODYNE LOZENGES.

PENNY SUGAR WORM CAKES, suitable for either *children* or *adults*. Have an immense sale, keep in any climate, and please everybody. Manufactured by

ROBERT GIBSON, Carlton Works, Hulme, Manchester, and 1 Australian Avenue, London.

Price Lists sent on application. Our Goods can be bought through any Wholesale or Export House in London.

H. BROOKS & CO.,

COLLAPSIBLE TUBE MANUFACTURERS,

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PORTABLE METAL SPRINKLER STOPPER,

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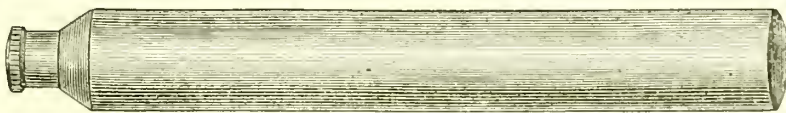
31 to 36 CUMBERLAND MARKET, REGENT'S PARK,

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BARTHOLOMEW ROAD, KENTISH TOWN, LONDON, N.W.

ESTABLISHED 1810.

COLLAPSIBLE TUBES OF ALL SIZES.



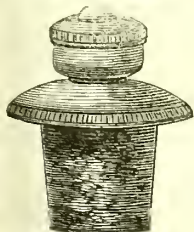
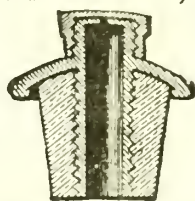
For Perfumes, Artists' Colours, Soaps, Cosmetiques, Creams, Oils, Varnishes, &c. These Tubes are inexpensive and portable, and may be applied to many useful purposes besides those above mentioned.

SOLE MANUFACTURERS AND PATENTEES OF

THE PORTABLE METAL SPRINKLER STOPPER,



With Cork fitted thereon for bottles of any size, and having apertures of various dimensions, especially adapted for Perfumes, Hair Washes, Lime and Glycerine Essences, &c. These handsome stoppers give a character and finish to the most ordinary bottles to which they may be applied. Gilt or plain; and put up if required in handsome glass lid boxes, suitable for shop counters and show cases, at moderate prices.



No. 18a.

THE "TORSION" PATENT SPRINKLER.

The two designs, Nos. 18a and 19a, are those to which we direct special attention, as sizes being in general use; other sizes will follow promptly to meet all requirements, on which Caps with two or more holes will be introduced to meet the public taste.



No. 19a.

Particular attention is called to the latest improvement in our Patent Metallic Stopper, the "Torsion."

This New Stopper adheres to the design of the original patent, which has been universally acknowledged as an ornamental and inexpensive article for the Toilette, as possessing all the advantages of a "Permanent and Indestructible Stopper, suitable for Bottles of all Sizes and Shapes," with the additional security it affords, that the Cap can never be entirely unscrewed, consequently it cannot be lost. It is specially effective as a Sprinkler, while giving a more prompt and copious, yet economic supply, through the improved action of the Cap. Such combined advantages, in an article of exquisite finish, have long been desired, and it is thus submitted for general approval, and its usefulness when tried will be appreciated by all.

Illustrations, Price Lists, &c., can be had on application, or through any Wholesale House in town or country. All Orders received direct will be promptly attended to.

CAUTION.—All Stoppers of our Manufacture are made of Pure Tin, and have the name of H. BROOKS & CO. stamped on the under side of the rim.

All Tubes are made of Pure Tin unless specially ordered of Mixed Metal, from the smallest size up to 13 in. by 23.

NOW READY.

SANGER & SONS' REVISED PRICE CURRENTFREE ON RECEIPT OF BUSINESS CARD, FROM
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MESSRS. SANGER & SONS beg to call the attention of their Customers and the Trade in general to the fact that their Prices, with the best Discounts off, come out in many cases lower than the published Net Lists of other Houses.

A few examples are given below.

Articles charged	40	come out net	35;	usual net prices	3/6
"	"	60	"	"	5 1 $\frac{1}{2}$
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"	"	106	"	"	9 0
"	"	250	"	"	21 4 $\frac{1}{2}$
"	"	280	"	"	23 11 $\frac{1}{2}$
"	"		"	"	24 0

FRENCH PATENT SCREW GLASS POTS & BOTTLES,
WITH METALLIC NICKLED CAPSULES.

The above new method will show advantageously Jams, Jellies, Honey, Dragées, Cachous, Pills, Lozenges, &c., is specially adapted for Export, and excels all others for neatness and elegance. Made in various new Designs—Pots, "Kalis" tube-shaped Bottles, Bocals, &c. Spécialité for Bottles for all kinds of Confectionery, Essences Manufacturers, and Sundries. (Wholesale only.)

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ESTABLISHED OVER 60 YEARS.

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Of all kinds (Best Quality) for HOME and EXPORT. POROUS PLAISTERS—Yards or Boxes. Order "St. Dalmas's" through Wholesale Houses. Prices on application.

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Best Preventive and Cure of Bronchitis, Asthma, and other Throat Complaints.

Manufactured by A. DE ST. DALMAS, Leicester.

Prices—1s. 1 $\frac{1}{2}$ d. and 2s. 9d.

To be obtained through all the Wholesale Houses.

HOMŒOPATHIC MEDICINES,

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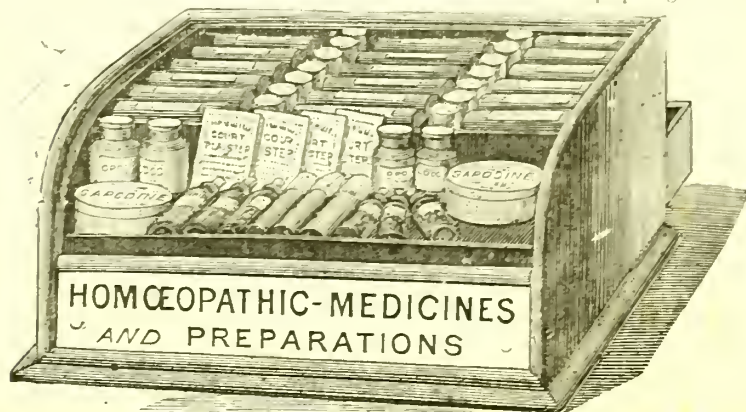
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The sale for these is very great. They are neatly put up,
3 dozen in a box, and sell at 1d. each. Per gross, 8/6.

B. & T.'s POROUS PLASTERS.

Strengthening, Capsicum, and Belladonna, per dozen, 2/.

POOR MAN'S PLASTER (Porous), Olibanum on
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B. & T.'s FLOATING LIGHTS.

Give a better light, and burn longer than any other.
Per dozen, 4/ and 8/.

B. & T.'s "PET" FEEDING BOTTLES.

In Box with handsome label, per dozen, 7/. Sixpenny size,
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Special quotations for large quantities.

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6 on a handsome Show Card. Sells well. Per dozen, 8/6.

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A watch-shape bottle, filled. 6 in a counter box, per dozen, 7/.
About 100 other patterns of Smelling Bottles are kept in stock.

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A French Sticking Plaster, possessing great advantages over all
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B. & T.'s NEW SPRAY PRODUCERS.

Globe shape, with indiarubber ball	9/.
Nickel plated,	"	"	...	15/.
Gilt,	"	"	...	18/.

B. & T.'s READING EYE SHADES.

Very light, self-adjusting, and ventilating. Very saleable.
Per dozen, 6/.

B. & T.'s MEDICATED JAPANESE "CURL" PAPERS.

As soft as silk; very strong and thin. 500 sheets in a packet.
Per dozen, 4/.

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Per quire, 1/.

Waterproof, grease proof, alkali proof.

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(FAITH, HOPE, AND CHARITY).

Pretty design; good perfume; sprinkler corks. Three in a Box.
Per dozen, 8/ and 15/.

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Hand Machine, recommended by Dr. Symes, 4/6 each.
The "Rotary," 25/ each.
Directions for pill coating free.

B. & T.'s CARDED SPONGES

(HONEYCOMB AND TURKEY).

12 on a Card. Sells at 1d., 2d., 3d., 4d., 6d., 1/., 2/6, and 5/ each.
Free from sand; no loss; no waste.

B. & T.'s FOLDING BOXES,

ON THE AMERICAN PRINCIPLE.

2, 3, 4, 6, 8, 12, 16 oz. sizes. Suitable for Dispensing or for
Proprietary Goods.

B. & T.'s SPRAY PRODUCER FOR THE THROAT.

No Metal work. Sells at 3/6 each. Price 27/ per dozen.

B. & T.'s ABSORBENT COTTON WOOL.

Per lb., 2/.

B. & T.'s PERFUMED BENZINE	...	per doz., 4/ and 8/.
B. & T.'s MUSICAL TEETHING PADS	"	4/.
B. & T.'s GLASS INHALER	...	15/.
B. & T.'s TOOTH PASTE	...	4/ and 8/.
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B. & T.'s MIRROR BACK HAIR BRUSHES	per doz.	9/

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(ESTABLISHED IN 1845),

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AMERICAN SOLUBLE PILLS & GRANULES.

"W. H. SCHIEFFELIN & CO., of New York, are the most recent prize by extending their agencies to this country. We have before noted the energy and skill displayed by more than one American drug house in the direction of ameliorating the forms in which drugs are administered. We have more than once of late years called attention to the tardy recognition by English prescribers of the advances made in practical pharmacy by our Continental and Transatlantic brethren. For a long time it seemed as though English Physicians and Practitioners were of opinion that there was only one form in which medicines could be legitimately administered, and that was in six or eight ounce mixtures, or sticky pills lying in a loose powder. This form of prescribing, although it has the advantage of being extemporaneous, has so many disadvantages that it should obviously only be resorted to when no other means are at hand for lessening the disagreeable incident attaching to the habitual consumption of a wine-glass full of nauseous fluid several times a day. To this want of consideration of the tastes of mankind, and to the adherence to old-fashioned forms of nauseous and bulky mixtures, on the part of practitioners generally, may be ascribed no small part of the popularity of what is often quite erroneously called 'homeopathic' practice, since it is often only 'globulism.' One step in advance was made when, by the introduction of alkaloids and active principles, it was found possible to prescribe, in tasteless granules, many medicines which had been previously prescribed in bulky and nauseous resins, powder, or infusion; and, again, a considerable progress was achieved by the introduction of improved processes of pill-coating. Of these improvements many of our English houses have not been slow to take advantage. But it must be confessed that some of the leading American firms have attained a conspicuous degree of excellence in their methods of pill-coating; and in the enterprise, skill, and conscientiousness with which they have applied this improved method in pharmacy to the production of a great variety of formulæ of pills, and to the excellence and care with which they are compounded. Messrs. Schieffelin & Co., whose products are now before us, with reports of their action from medical men to whom they have been entrusted by us for trial, take in America an honourable place among pharmacists; and in England they have secured what will be generally recognised as an endorsement of the high class for

the truthfulness and merit of their products. Messrs. Allen & Hanburys, Plough Court, have a long-established reputation for conscientious care and skill in the conduct of their business, and in the scrutiny and preparation of their medicines. They have accepted the agency of Messrs. Schieffelin & Co.'s pills and granules, and guarantee the truthfulness of what is claimed for them: that the materials used are of the finest quality; that the various pills contain precisely the articles designated in the formulæ; that they are correct in the quantity of materials stated, and prepared with scrupulous exactness as to weight, and accuracy as to subdivision. It is obviously of importance to have such a guarantee, inasmuch as pills thus coated, although they may be from time to time examined critically, most, in the main, be taken on the good faith and with the guarantee of manufacture, as to their accurate dispensing and faithful composition. The guarantee of Messrs. Allen & Hanburys is important, therefore, in this connection. These pills of Messrs. Schieffelin are coated while soft; they are not injured by heat in manufacture, neither are the vegetable and organic matters charred, nor are the volatile principles lost. The coating, which is single, inert, and soluble, is also tasteless, transparent, and colourless. The coating being transparent, each pill has its distinctive colour—thus affording a safeguard against the mistakes which may occur where the pills have an uniform opaque white coating. The thinness of this coating, the soluble condition of the contained mass, will be readily observed on trial; and the result of reports made to us, after practical use of a variety of formulæ, is, that the coating is most readily soluble, and that the pills have been found, in all instances, to have a rapid and effective action, according to their composition. The number of formulæ supplied is very considerable, amounting to some hundreds; and we cannot doubt that Schieffelin pills, added by the satisfactory circumstances under which they are introduced, will become very popular, and have an extensive sphere of usefulness. The subject of improved methods of prescribing is one which is certainly not undeserving a good deal of attention from physicians and medical practitioners, and one which we should be glad to see treated in a practical sense by lecturers on materia medica, and clinical physicians, who would take the trouble to investigate, a little more fully and generally than at present, the existing resources of improved pharmacy."—From the *British Medical Journal*, Dec. 31, 1881.

ABSOLUTE PURITY GUARANTEED.

W. H. Schieffelin & Co.'s SOLUBLE PILLS AND GRANULES

Received the only Silver Medal, the highest recompense awarded to Pills, Paris Exposition, 1878; First Award, Sydney, 1879; Medal of Superiority, New York, 1879; First Award, Silver Medal, Melbourne, 1881; Silver Medal, Matanzas, Cuba, 1881; Award of Merit, International Medical and Sanitary Exhibition at South Kensington, London, 1881.

ONLY AWARD FOR PILLS, BRIGHTON HEALTH CONGRESS AND SANITARY EXHIBITION,
DECEMBER, 1881.

A Special Edition of Messrs. SCHIEFFELIN & Co.'s Book of Formulæ and Prices has just been received, and can be had, together with samples and other information, on application to—

MESSRS. ALLEN & HANBURYS,
GENERAL AGENTS FOR GREAT BRITAIN AND IRELAND,
PLOUGH COURT, 37 LOMBARD ST., LONDON.

We have undertaken the Agency for Messrs. W. H. Schieffelin & Co.'s SOLUBLE PILLS AND GRANULES with much satisfaction, under the conviction that they are in all respects of the highest excellence. The beautiful nicety with which the Pills are finished must strike everyone, and it is perfectly easy to demonstrate the solubility of the coating. From our knowledge of Messrs. SCHIEFFELIN & Co., we recommend their Pills with entire confidence as to the quality of the ingredients and fidelity with which they are compounded, for which, indeed, the old-established reputation and high standing of their firm are a sufficient guarantee. The superior merit and special advantages of these Pills have been recognised at numerous Exhibitions, and they are now in general use in the higher class of medical practice throughout the United States.

Plough Court, Lombard Street, London, E.C., September, 1881.

ALLEN & HANBURYS.

W. H. SCHIEFFELIN & CO., Import and Export Druggists, and Manufacturing Chemists and Pharmacists,
NEW YORK, U.S.A. ESTABLISHED 1794.

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SOLUBLE & PERMANENT SUGAR-COATED PILLS.

No Pin-Holes. No Secret Coating. Purest Drugs.

Award of Merit, International Medical and Sanitary Exhibition, 1881.

SIX GRAND WORLD'S FAIR MEDALS. FIRST CENTENNIAL PRIZE OVER ALL COMPETITION.

The manufacture of official and other ready-made Pills for Physicians' prescriptions has been, on our part, confined to those coated with sugar and round in shape; because an experience of more than a quarter of a century serves to convince us that sugar is the only proper material with which to coat a pill; in confirmation of which we append the following reason :—

- 1.—Because sugar is more soluble than gelatine, glue, chalk, or talc, of which the two former are the same in substance and properties. "Sugar-coated pills are more soluble than gelatine-coated or compressed pills."—*Prof. Remington's Paper read before the American Pharmaceutical Association, Boston, 1875.*
- 2.—That according to our process, no sub-coating of insoluble shellae is necessary.
- 3.—That the direct application of heat is entirely avoided, and the mass's can be coated when so soft as not to admit of being dipped in a hot solution of gelatine, or other substance.
- 4.—Sugar as a coating is not incompatible, as is the case with gelatine, when brought in contact with certain kinds of food, astringent fruits, or wine containing Tannin, by which it (gelatine) is converted into a condition the basis of leather.
- 5.—The preservative properties of sugar, and the tendency to attract rather than yield moisture as gelatine does, prevent the subsequent drying and hardening of the pills.
- 6.—A round substance is more easily swallowed than one which is elongated, flattened, or pointed, there being no art in deglutition that would enable it to pass endwise.
- 7.—The colour and shape of some gelatine-coated pills are so inelegant by comparison with the round, white sugared pill, as to be repulsive to sensitive patients.
- 8.—Actual experiments, which you are enabled to perform as to *solubility* and the administration of a dose of cathartic pills, the effect of which is soon apparent, will practically demonstrate the truth of our claims for the superiority of WARNER & Co.'s method over ALL others for coating pills.

WM. R. WARNER & CO., Manufacturing Chemists, Philadelphia.

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STEADY and sober Man (32); can prescribe, dispense, extract teeth, &c.; good reference. Apply to P. E. Fox, 43 Middle Street, Tynemouth.

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ADVERTISER, desiring further experience, will Engage for 3 years with a Chemist in Manchester or neighbourhood, allowing time at business to study for the Minor; salary accordingly; 4 years' experience; good prescriber; abstainer; aged 23. "Bona," 11 Bury New Road, Manchester.

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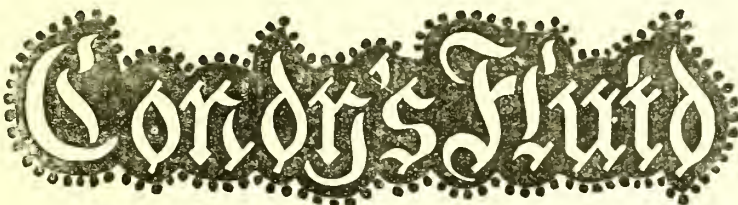
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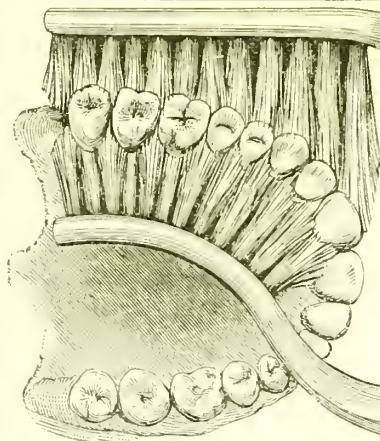
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DR. PIERREPONT has introduced these brushes to meet a long-felt want, i.e., brushes that will *cleanse the interstices between the teeth*. Each brush is accurately adapted, the one to the outside and the other to the inside of the dental arch, and the peculiar setting and trimming of the bristles enables them (the long bristles) when the handles of the brush are *rotated* between the fingers and thumb to move upwards or downwards in a perpendicular direction, and so sweep out any food, &c., which has lodged between the teeth. This feature, combined with the ability to cleanse the *inside* of the dental arch, are advantages not to be found in any other teeth brushes. The brushes can be used transversely as well.

TITTERTON & HOWARD,

Sole Approved and Licensed Makers,

WHOLESALE BRUSH MANUFACTURERS,

8 & 10 GREAT TITCHFIELD ST., LONDON, W.

WHITE FELT CORN AND BUNION PLASTERS.

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GREEN GUM PLAISTERS.

For Corns and Bunions.

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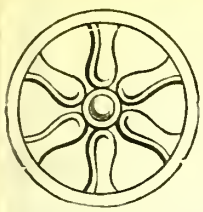
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PAINLESS CORN
& WART PAINT.

Contains no Arsenic or any
Injurious Ingredient. This prepa-
ration has the advantage over
similar preparations in being
quite Painless. It is an en-
tirely new mixture, and though
only discovered quite re-
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Directions.—You Use—
Apply a thick coating of the
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for 6 or 7 days; then detach
the destroyed Corn (or Wart)
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In Bottles, with Camel's Hair
Pencil, 6d. each, sample by
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HYDROGEN PEROXIDE. GOLDEN HAIR WASH

For Bleaching Hair, Feathers, Wax, Ivory, &c., &c.

12 VOLUMES.

Price 2/6 per Pound; 11/6 per Winchester Quart; or 20/ per Gallon.

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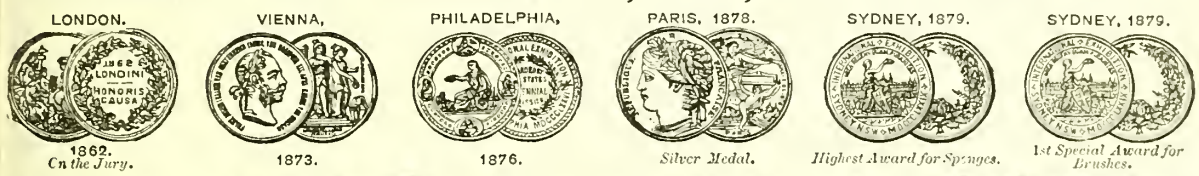
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Are manufactured at their Factory at Victoria Park, expressly set apart for this one description of Brush.

			Price per doz.
First Quality	G.B. Kent & Co	London	6/6
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Third Quality	WARRANTED	LONDON	4/0
Fourth Quality	WARRANTED	SECURE	3/6
Fifth Quality	WARRANTED	SOUND	3/0
Badger Hair Tooth Brushes	..	4/6 6/0 8/0 11/0 per doz.	
Children's "	..	3/0 3/6 4/0 "	
Tooth Brush Guards	..	Metal, 3/3 Porcelain, 4/6 "	
Japanned Wet Brush Holders	..	3/0 5/6 6/0 13/0 "	

THE NOVELTY TOOTH BRUSH.
TRIPLE CEMENTED AND EXTRA SECURE.
Depot for America: 91 Fulton Street, NEW YORK.

KENT'S NAIL BRUSHES.

Bent Back	..	4/0 7/0 8/6 10/6 12/0 14/6
Round End	..	4/0 7/0 8/6 11/0 13/0 15/0
Roached Grooved	..	19/0 24/0 28/0 32/0 36/0 40/0

NOVELTY TOOTH BRUSH GUARD.
(Telescope pattern, silver-plated.)

No. 22	20	23	24
8/8	13/0	17/6	22/0
Handled Nail Brushes	..	4/0 4/6 7/0 8/0 10/6 12/0 16/0 per doz.	
Wood	..	Trepanned 12/0 16/0 18/0 21/0 24/0 27/0 "	
"	..	Fibre 21/0 27/0 30/0 36/0 42/0 48/0 54/0 per grs.	

KENT'S CLOTH BRUSHES in WOOD or IVORY.
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For Home, Foreign, and Colonial Markets.
Wholesale only.

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FOR

TINCTURES, ESSENCES, PERFUMES, &c.,
OXFORD ROAD DISTILLERY, MANCHESTER.

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Strength per cent.	Specific Gravity.	Price per gallon.
63 over proof ..	0.8238 ..	20/6
60 " " ..	0.8298 ..	20/0
55 " " ..	0.8366 ..	19/6
50 " " ..	0.8482 ..	19/0

Terms—Cash on Delivery. Jars to be returned or paid for.

For Exportation, Cask included, 4/0, 60 O.P., F.O.B.

Orders from the country must be accompanied with a remittance, including the price of the Jars, which are charged as follows:—2 galls. 3/-; 3 galls. 3/6; 4 galls. 4/-; 5 galls. 5/6; 6 galls. 6/-. When the empties are returned the money will be repaid.

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(Prepared by the Daughter of the late John Bond),

AN ATTRACTIVE AND NOVEL GOLD SHOWCARD,
With Inks affixed, and so constructed that it can be either suspended in the Window or used as a Counter Card. Quite a Novelty; or a

TRANSPARENT LID BOX OF NEW DESIGN.

By exposing a Card or Box in Window and on Counter, you will find Sales considerably increased.

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Representation of 6d. and 1s. Blue Wrapper Ink.

NO HEATING REQUIRED. ENLARGEMENT OF BOTTLES.

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Also Duty Free for Exportation. Best Methylated Spirits at Lowest Prices.

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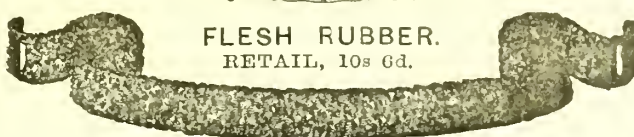
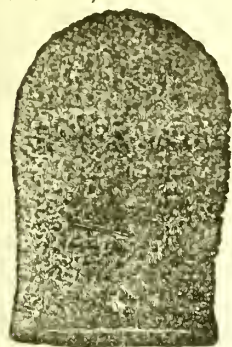
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RETAIL, 2s. & 3s. each.

BY HER MAJESTY'S



ROYAL LETTERS PATENT.



FLESH RUBBER.
RETAIL, 10s 6d.

INDIA RUBBER FLESH GLOVE AND RUBBER.

This is an ENTIRELY NEW APPLICATION OF INDIA RUBBER, and lovers of the Bath pronounce them

THE ONLY EFFICIENT FLESH GLOVE AND RUBBER.

Being always absolutely Rough in hot or cold water, they are altogether unique. They cannot scratch the body, and produce a fine lather with Soap. They are manufactured from Pure India Rubber (the properties of which are peculiarly cleansing and genial to the skin), and retain their strength for many years.

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I. LIVERMORE, Patentee.

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Richly Perfumed, and guaranteed to contain the necessary quantity of GLYCERINE for effectually imparting to the SKIN the softening and healing properties for which it is so justly famed. 1s. 6d. Boxes of Three Tablets, 12s. per Dozen Boxes.

SELECT TOILET PREPARATIONS, extensively increasing in demand, which attests their excellent quality.

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<i>Cent-Fleur</i> (copyright) 2/6 Boxes of 3 tablets 20/		<i>Cent-Fleur</i> (copyright)		<i>Cent-Fleur</i> (copyright) ... 8/	12/ & 20/
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THE ORIGINAL AND ONLY GENUINE.

The great popularity of this exquisite Perfume is a proof of its excellence and superior qualities.

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DUVAL'S MILK BALSAM for the Hair.

A Pretty Novelty for ordinary daily use. It has the appearance of Milk, and is very agreeable in application, without the greasiness of lime juice preparations. It is not liable to separate, and is put up attractively in large Bottles at 1s., 1s. 6d., and 2s. 6d.

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AS USED AT ALL THE GOVERNMENT MUSEUMS.

Suited for any substance, from glass and china to leather, wood, or iron, and the articles joined bear washing in boiling water.

The large range of materials to which this cement is applicable, its transparency, strength, and facility in use, and the readiness with which it adheres, renders it, without doubt, THE MOST USEFUL EVER INVENTED. It is equally applicable to articles of the coarsest or the most delicate construction.

The great success which attended its introduction, now more than 20 years ago, has given rise to a host of imitations, under as many various titles, some of these being of an exceedingly crude character, and most unsatisfactory to both vendor and buyer. The above celebrated Cement is uniformly prepared and neatly put up, and is guaranteed to remain unchanged in any climate.

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This old-established and increasingly favourite Dentifrice has been Fifty Years before the Public. It is warranted to retain its properties and keep in good condition in any climate.

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(WITH GREASE), Restores the Hair if weak or falling off.
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Never fails. 1s. per pot.

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PREPARED SILVERY WHITE GUTTA PERCHA ENAMEL,

FOR STOPPING DECAYED TEETH.

SILVERY WHITE GUTTA PERCHA ENAMEL.

35 squares in a box, to Retail at 1d. each; Wholesale Price, 1s. per box.

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MONA BOUQUET

Retail, 1/1, 1/9, and 3/6; Wholesale, 9/15, and 30/ per doz.

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10 per Cent. allowed on Orders by post accompanied by cash.

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SUETS, AND OILS.

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CAUTION.—See that each package bears their label with name and weight.

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kind.

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PRICE LISTS ON
APPLICATION.

TOILET SOAPS
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Concentrated (various) CHOICE ESSENCES

(IN BULK).
No. 30, 12/ for 20 fluid ounces.
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AND IN doz.
Corked Bottles .. 3 6 4 7/ 8/ 12/
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Glycerine and Lime
Cream .. 4/ and 8/
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(separable and unseparable.)
Brilliantine (White Rose),
Scented Bottles .. 8/ and 12/
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Arenas Nut .. 4/ and 8/
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Special Soaps in Boxes.

Cold Cream Soap, doz.
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" and Carbolic do. 8/ and 12/
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Baby Soap, 4 tablets in box
" 12 ditto 2/
Family Economic, 4 ditto 2/
" 12 ditto 2/
Thymol, 3 tabs. in box 8/ and 12/

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(IN WRAPPERS).

Carpet & Cloth Soap 3/6 and 7/ dz.
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Jewellers .. 4/
Petroleum .. 4/
Pumice Stone .. 3/9
Juniper Tar .. 4/
Sulphur .. 4/ and 8/
Zir .. 4/ and 8/

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Brown and White Windsor
Curd ..
Elder Flower ..
Glycerine ..
" and Almond ..
Honey ..
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EASTER EGGS, ALL CONTAINING PERFUMERY.

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5/6 size, 36/ per doz. 10/6 size, 72/ per doz.

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FOR INFANTS, CHILDREN, AND ADULTS,
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Sold in Cases of Two
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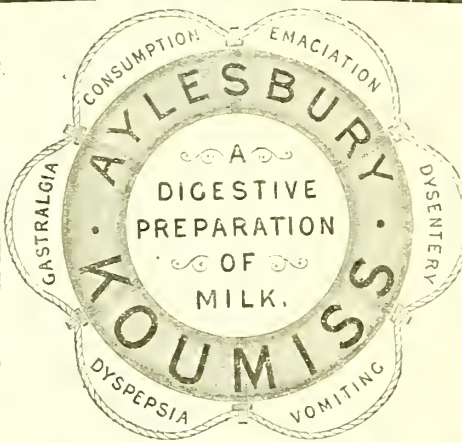
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	Net Cash.	To Acct.
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A MONEY SAVING TEA. ABSOLUTELY PURE.

The small leaf from some of the finest India and China Teas. Produces a Tea in the cup, stronger, richer, and cheaper than most whole-leaf Teas. Agents appointed, where unrepresented, throughout the United Kingdom.

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BEST at the PRICE EVER SOLD. Great strength and a most useful Tea where there is a large consumption. Recommend it to all who wish to SAVE in their Tea. Agents appointed, where unrepresented, throughout the United Kingdom.

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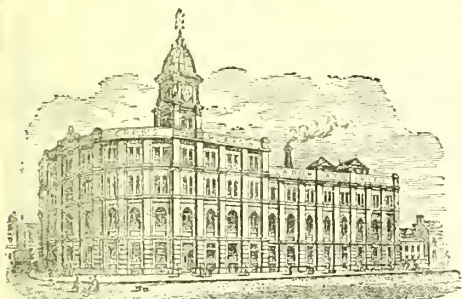
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Are made from the finest mustard seeds only. Their compounds, as manufactured for upwards of a century, are guaranteed free from all ingredients imparting spurious heat, and are therefore equally suitable for both table and medical purposes.

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In Tins, 6d., 9d., 1/0, and 1/6.

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Excellent in quality, neatly packed,
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 USEFUL and SALEABLE TINTS,
 Superior Colours, well packed, and
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(Framed and Glazed), with Specimens of
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SHOW BOARDS,

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The demand for these Stains is steadily
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RETAIL PRICES:

Small Bottles of Gold with Liquid	1s. 6d.	Large Bottles of Gold	3s. 6d.
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NEW 1s. 6d. and 2s. 6d. PACKETS.

CONTENTS:—1 Bottle Gold Powder, 1 Bottle Mixing Liquid, 1 Mixing Bowl, 1 Brush, in Cardboard Box.
 Where the Bowl and Brush are not required, the usual 1s. 6d. Packet should be purchased, as it contains a larger quantity of both Gold and Liquid.

A Copper and Silver Paint, at the same prices, and yielding equally good results, can be obtained.

NOTICE.—The Gold Paint is so easy of application, economical in use, and excellent in appearance, that it is extensively employed in the
 ornamental Gilding of Decorative Mouldings, Carvings, and all Fancy Ornaments made either of Metal, Wood, Porcelain, or Plaster, and the effect
 that can be produced, even by unskilled hands, makes it useful to all engaged in fancy or home embellishment.

Sole Proprietor and Manufacturer, } **RICHARD J. ALLEN**, Mansfield Place, Kentish Town, London, N.W.
 If Translations are supplied, Circulars, Cards, or Labels will be printed in any language necessary for its sale.

MORRISON & THEW

(Late C. F. THEW & CO.).

SHELLAC & GUM MERCHANTS,

DEALERS IN DYE STUFFS, & PAPER MERCHANTS,
 32a Faulkner St., Portland St., MANCHESTER.
 Samples and Prices on application.



For nearly Half a Century this Powder has sustained an unrivalled
 reputation throughout the United Kingdom and the Colonies as the BEST
 and SAFEST article for Cleaning Silver and Electroplate.
 Sold in Boxes, 1s., 2s. 6d., and 4s. 6d. each. Also
GODDARD'S FURNITURE CREAM,
 Sold by all Patent Medicine Houses and Wholesale Druggists,
 Manufactured by J. GODDARD, Station St., Leicester.

MARBLE RENOVATOR,

For Cleansing and Polishing Marble. Retail at 8d., 1s. 2d., and 2s.
 Surprising in its Effects.

"ANTI-RUST,"

For Preserving all kinds of Polished Steel, Iron, and Gun Metal from Rust.
 Used with Success by some of the largest Sheffield Steel Manufacturers.
 Retail at 1s. Wholesale from—

CUBLEY & PRESTON, 4 High Street, SHEFFIELD.
 And all Wholesale Houses.

FOR CLEANING PLATE.

BRADLEY & BOURDAS'S
ALBATUM or WHITE ROUGE,
 For Cleaning Gold, Silver, and Plated Goods.

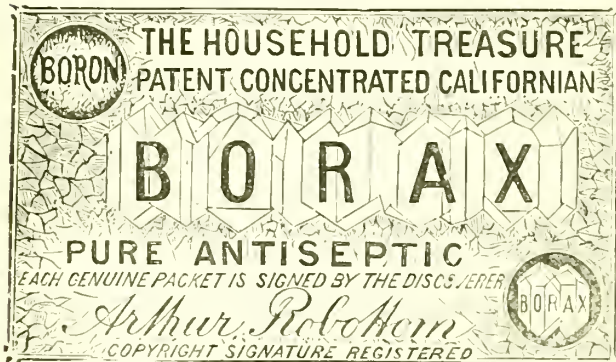
Since its introduction as a substitute for the ordinary Rouge,
 a quarter of a century ago, the sale has amazingly increased
 both at home and abroad. A trial is only needed to prove its
 superiority over other plate powders in use. Sold in Boxes at
 1s. and 2s.; Tins, 6s. 6 Pont Street, Belgrave Square,
 and 48 Belgrave Road, London. S.W.

PATENT CALIFORNIAN BORAX.

TRADE LIST, BORAX USES, DESCRIPTIVE PAPERS, &c., POST FREE.

"A large supply of illustrated handbills accompanies each box, and doubtless a large trade can easily be done where these goods are introduced."—*The Grocer*.

Full Directions for Laundry, Household, Washing, Toilet, Medicinal, Sanitary, and other uses, with each 1d., 3d. & 6d. Packet.



Facsimile of Trade Mark Label, and Exact Size of 3d. Packet.

Extract from "THE CHEMIST AND DRUGGIST."

AN APOSTLE OF CALIFORNIAN BORAX.—"We have before had the pleasure of introducing Mr. Arthur Robottom to our readers, and some of them may remember a lively narrative he gave in our pages a couple of years back of his borax journeyings in California. Mr. Robottom is a veritable enthusiast, and it is refreshing to meet with one such now. He has just been in this office, and told us marvellous tales of the virtues of his fetish—how it softens the hands in the washing, or the beard in shaving; whitens linen, and cleanses it far better than soda, beside that it never rots it; kills all deleterious insect life, but preserves all that is worthy to live; rapidly heals all ulcers or festering wounds; purifies children's heads; cures sore throats; removes insects from vines; prevents incrustation on steam boilers; preserves meat, and all animal or vegetable matter liable to decay; prevents tooth-ache; cleans sponges; brings the flavour out of tea; and, in fact, MAKES ITSELF GENERALLY USEFUL."

"Of the greatest value to mankind, but not sufficiently known."

"A marvellous Antiseptic no Housewife should be without."

"Our Country has given to the world the wealth of its mines of gold and many other wonderful products, but none equal in value to this 'NEW AND IMPORTANT DISCOVERY,' adapted for every Personal, Domestic, Cleansing and Sanitary Purpose."—*Californian Alta*.

THE LANCET speaks very highly of the value of Borax.

CAUTION.—This and other valuable Preparations are manufactured only by the Sole Patentees, THE PATENT BORAX COMPANY, Birmingham.

The Company regret the necessity of publishing this caution, but it is needful, as many comparatively worthless imitations are now being offered.

PATENT BORAX CO.,

WORKS, BIRMINGHAM; AND 26 WORSHIP STREET, LONDON, E.C.

Also at California, Tiflis, Dublin, Edinburgh, and Paris.

INDISPENSABLE IN EVERY LAUNDRY.



Prevents the Iron sticking to the Linen, and puts the same amount of finish on the Linen as when fresh from the manufacturers' hands.

ALWAYS SATISFACTORY.

CAUTION.—Each Packet and Box bears my Registered Trade Mark as annexed.

Sold in 1d., 3d., 6d., and 1s. Packets, and in large Boxes, for Hotels, Laundries, &c., 5s., 10s., and 20s. each.

May be had Wholesale from S. MAW & SONS, BOURNE & TAYLOR, HODGKINSON, STEAD & TREACHER, and BURGON, BERNHARD & Co., London, or from the Sole Manufacturer.

TRADE MARK.—"COAGULINE."—TRADE MARK.

KAY'S New TRANSPARENT CEMENT for BROKEN ARTICLES.

"Clear as crystal," "stronger than glass," "tough as leather."

6d., 1s., 2s., in boxes or on cards. Show cards, handbills with name, &c., Specimens, &c., for home or export, free.

KAY'S COMPOUND ESSENCE OF LINSEED, "The Stockport Remedy" for Coughs and Colds. Cures nine cases out of ten. In bottles, 9d., 1s., 1s. 1d., 2s., 9d., 4s., 6s., &c. Sold by all Chemists.

LINSEED LOZENGES.—(Solidified Linseed Tea).—An agreeable sweetmeat, most demulcent and nourishing, which may be taken in any quantity by Children and Adults, for their soothing and beneficial effect. Packets 6d.

CHLORO-LINSEED COUGH LOZENGES.—A medicated Linseed Extract, for out-door use, on leaving a heated room, &c. Demulcent, Expectorant, Warming and Soothing. Packets, 6d.

LINUM CATHARTICUM PILLS (of the Purging Linseed). Purely vegetable; the most wholesome aperient and corrective for young persons and adults. Boxes, 9d., 1s., 1s. 1d., 2s., 9d., of all Chemists.

KAY'S TIG PILLS.—A specific and pure nervous Tonic. The best form of administering the Quinine, Iron, and other Tonics of which they are largely composed. Boxes, 9d., 1s., 1s. 1d., 2s., 9d., of all Chemists.

STRAMONIUM CIGARETTES.—For Asthma. 2s. per dozen.

QUE CEMENT.—For Tipping Billiard Cues. 1s. and 2s.

KAY'S CUE-TIP FIXER, with improved Buffer-Spring &c. 9s. 6d. each.

KAY'S "L.C." BOLUS, for Coughs, Colds, &c., of Horses, Cattle, Sheep, Poultry &c. 6s. per dozen.

For Circulars, Show Cards, Specimens, &c., address:—

KAY BROTHERS, Stockport.

Sold by all the Wholesale Druggists, Sundriesmen, and Medicine Vendors.

BRECKNELL'S SKIN SOAP

THE MOST SALUBRIOUS SOAP IN USE.

BRECKNELL'S SADDLE SOAP,

Used in the Royal Stables, by the Army, and in Hunting Establishments.

THE BEST ARTICLE IN USE FOR THE PURPOSE.

BRECKNELL TURNER & SONS,
HAYMARKET, LONDON, ENGLAND.

THE "OTTO" SILENT GAS ENGINE.

NO BOILER OR STEAM NEEDED.
HIGHEST AWARDS AT SYDNEY AND MELBOURNE EXHIBITIONS.

Over 6,000 Ottos
now at Work.

Particularly suitable
for Aerated Water Work,
Drug Grinding,
Hoisting, &c.

Please write for
Special List of Engines
doing this Work,
and Testimonials.

LONDON HOUSE:
24 Poultry.

LIVERPOOL STORE ROOMS:
Basement, Corn Exchange.

SIZES { Nominal Horse Power ...
Maximum Indicated Horse Power

1	2	3½	6	8	12	16
1.1	2.26	3.96	5.9	11.57	14.7	23.1
36 to 40	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70	60 to 70

25 } OFFERED.

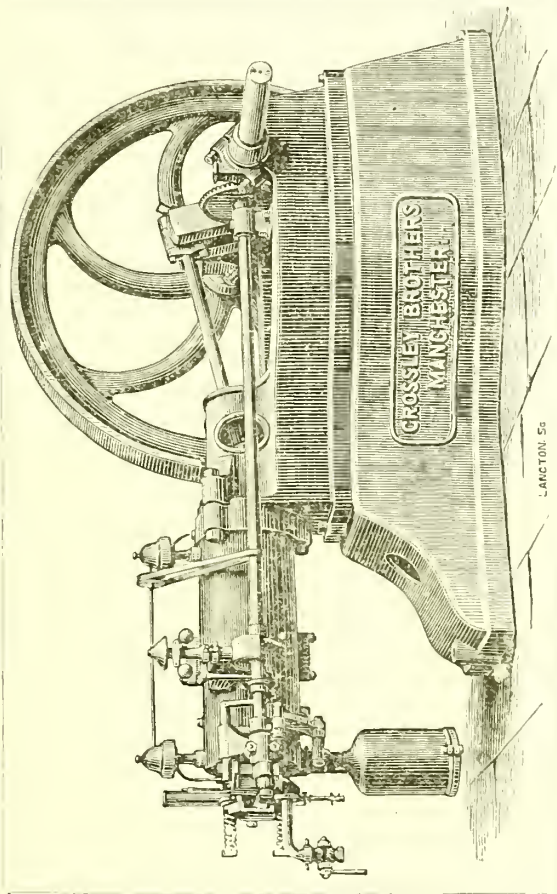
CROSSLEY BROTHERS,

LIMITED,

CALEDONIAN FOUNDRY, MANCHESTER.

AGENCIES WITH STOCK AT ALL PRINCIPAL COLONIAL PORTS.

STARTS AT A MOMENT'S NOTICE.



STARTS AT A MOMENT'S NOTICE.

The ONLY GAS ENGINE which received a GOLD MEDAL
at the Paris Electrical Exhibition.

Over 6,000 Ottos
now at Work.

ADVANTAGES AS

Compared with Steam.
No Heat. No Danger.
No Dirt. No Chimney.
No Dust. No Smoke.
No Extra Insurance.
No Glands to Pack.
No Safety Valves to Watch.
Always Ready.
Occupies little Space.
Requires no constant attendance.
May be run Night and Day.

GLASGOW HOUSE:
193 Sauchiehall Street.

BRISTOL HOUSE:
127 Redcliff Street.

HAYWARD TYLER & CO.

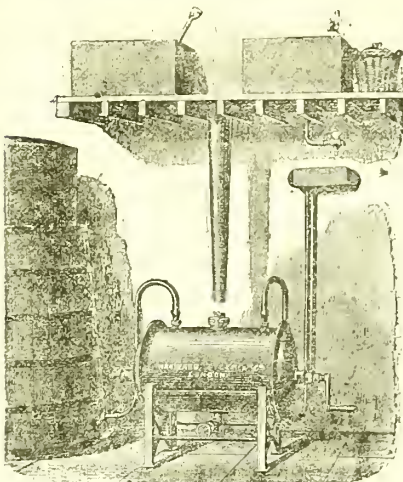
HAYWARD TYLER & Co

71

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HAYWARD TYLER & Co

GAS GENERATING MACHINERY



PRICES OF GAS GENERATORS

No. 1, with flat and loose pulleys for steam power	£14 5 0
" for hand power	12 15 0
No. 2A, with pulleys for steam power	21 10 0
" for hand power	20 8 0
No. 3B, with pulleys for steam power	24 5 0
" for hand power	22 10 0

All the above prices include acid box and pipe as shown.

A small tank containing a carboy of acid or more may be placed on a shelf or on trestles above the acid box, and an "Adamas" tap connected with it, by means of which the supply of acid can be regulated as required.

Price of STRONG WOODEN TANK lined with lead, fitted with patent "Adamas" tap, and with cover.

To hold one carboy of acid	£2 0 0
To hold two carboys	3 0 0
To hold three carboys	5 0 0

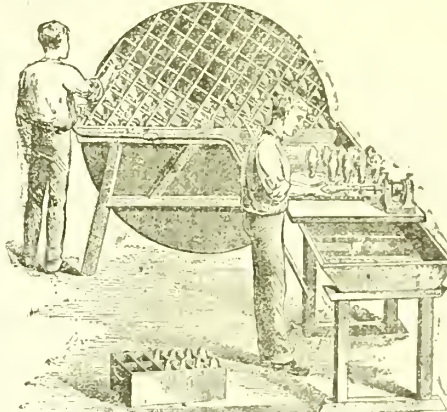
TAP "ADAMAS" TAP, with lead pipe 3 9 |

TRAD ACID BOTTLE, with patent "Adamas" tap for emptying carboys 2 5 |

The "patent Adamas" is a very hard material of the nature of earthenware, especially manufactured to be impervious to strong acids.

BOTTLE WASHING MACHINERY

WILSON'S PATENT PARTITIONED WHEEL FOR SOAKING BOTTLES



After careful examination and observation of the various systems of bottle washing in use we are inclined to recommend the above as on the whole decidedly the most efficient and the most convenient. It is adopted by preference in the largest and most advanced water factories in London. It consists of a large wooden rack in the form of a wheel, suspended in a trough of water like a gradient. The dirty bottles are placed in the rack as shown at the left and after passing through the water are taken out on the other side to be brushed and rinsed: the weight of the bottles that are put in carrying them down into the water as the others are removed. Once the wheel is kept revolving slowly without any exertion in working it turns the bottles and they are thereby washed without the slightest risk of the breakage that takes place from soaking a number in a trough together. One bottle washer and a lad or girl to supply empties to the wheel can wash, brush, rinse, and take off 50 dozen an hour easily. The wheels can be arranged in various ways as shown in next page, viz. —

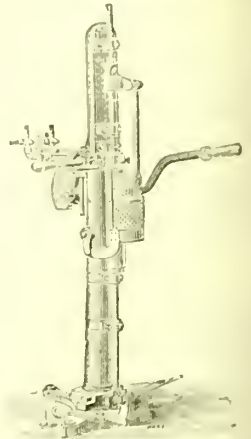
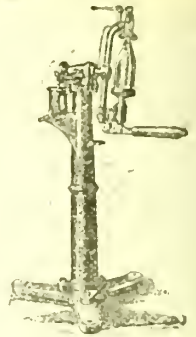
Right hand wheel, Fig. A
A set wheel copper fastened, galvanized iron tank, galvanized iron tray, frames and 1-2 for tank, complete with brushing head and rollers. Wheel holding one gross.

Price ... £16 10 0
Left hand wheel, Fig. B (as above). Price ... £16 10 0
The above with treadle-brushing head ... £21 10 0

Double wheel, Fig. C
Either arranged as shown, or with wheels set back as in fact from back of tray. With 2 brushing heads and 2 rollers and stop valves. Price ... £30 0 0

Double wheel, Fig. D
With double brushing head, 2 rollers, stop valve, and one double-shot tray. Price £30

Extra large wheel to hold 2 gross. Fig. E
With double brushing head and double set of rollers. Price ... £35 10 0



[2]

NOVELTIES IN BOTTLES AND STOPPERS.



THE
GLASS, EBONITE, PORCELAIN, &c.
DISC BOTTLE,
WITH NEW PATENT PURE RINGS,
SIMPLE, PERFECT, UNIQUE.

Likely to supersede all other Patent Bottles.

The Disc effectually covers the rubber
when the bottle is filled.

These Bottles and Ebonite and
Porcelain Discs can be supplied
at a cheaper rate than the
Prepared Glass, as No. 1.



THE SCREW STOPPER & BOTTLE,

For Ales, Porter, Cider, and
Brewed Beer.

The Screw Stoppers can be attached to the necks of the Bottles by a band of wire and a small chain, if preferred; price about 3s. 6d. extra. See Fig. 4.

When bottling, the Stoppers must be wetted before screwing them in. Screw it gently but firmly home.

They should not be subjected to the action of any strong alkali, or great heat, and are not recommended for bottling spirits at present.

Essential and Indispensable for every
Refreshment Room Proprietor, for every Hotel
and Public-house, and for every Householder.

Our other, and well-known Stoppers,
&c., still supplied as usual.

SAMPLES ON APPLICATION.



OUR ORIGINAL AND WELL-KNOWN
STOPPERS HAVE NOW BEEN
IN USE FOR YEARS BY
UPWARDS OF 1,000



MINERAL WATER MANUFACTURERS
AND OTHERS THROUGHOUT
THE UNITED KINGDOM
AND THE WORLD.

BARRETT & ELSERS, 9 Dacre Street, Westminster, LONDON, S.W.

SODA WATER MACHINERY

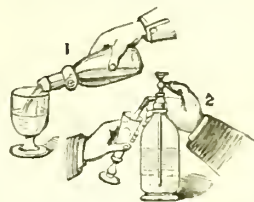
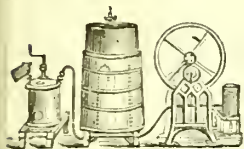
BY

BARNETT & FOSTER,

37 FORSTON STREET, SHEPHERDESS WALK, LONDON, N.

Prize Medals—London, 1862, 1873, 1874; Paris, 1867, 1878; Vienna, Philadelphia, Cape, &c. Highest Award, Sydney, 1879-80.

Our Machines are universally adopted throughout the world for the manufacture of all kinds of Aërated Drinks, whether in bottles, syphons, or counter fountains. There are in England alone over 1500 factories where our Machinery is in use. They are the simplest, safest, and cheapest for the purpose, and produce a highly-charged gaseous water free from metallic or foreign contamination.



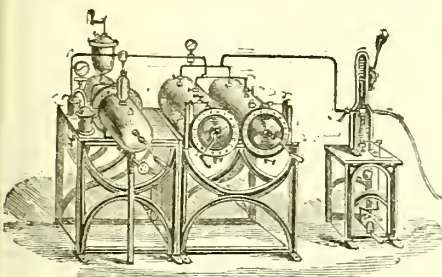
All our Machines have a Gasometer, and it forms a most important necessity where purity of product is required, as in this the gas is expanded and purified; it also removes the possibility of explosion, and avoids the necessity of complication—these we consider of greater importance than the saving of a few inches of floor space.

Our valuable Book of Recipes and Instructions accompanies every Machine, and the most unskilled can at once produce Waters of the highest class.

Sole Agents for Codd's Patent Bottle, Fig. 1. Sole Manufacturer of the "London-made" Syphon Fig 2.

PATENTEES OF THE IMPROVED CORKING MACHINE FOR CHAMPAGNE BOTTLES.

ILLUSTRATED CATALOGUE FORWARDED FREE.



SODA WATER MACHINE COMPLETE, WITH RACK.

SODA WATER MACHINERY,

ALL KINDS.

PATENT STOPPERED BOTTLES

ALL KINDS.

ICE-MAKING MACHINES,

AND ALL REQUIREMENTS OF EITHER TRADE. SEPARATE CATALOGUES, POST FREE.

BEFORE BUYING, SEND FOR CATALOGUE TO

DAVENPORT & CO., 99^N High Holborn, LONDON.

ALSO AGENTS FOR

HAYWARD TYLER & CO.'S MACHINERY.
BARRETT'S PATENT BOTTLES.

CHEAVIN'S FILTERS.
WILKINSON'S PATENT BEER BOTTLES.
CROSSLEY'S AND "BISSCHOP" GAS ENGINES.

SODA WATER MACHINERY,

AND ALL ACCESSORIES USED IN THE TRADE, BY

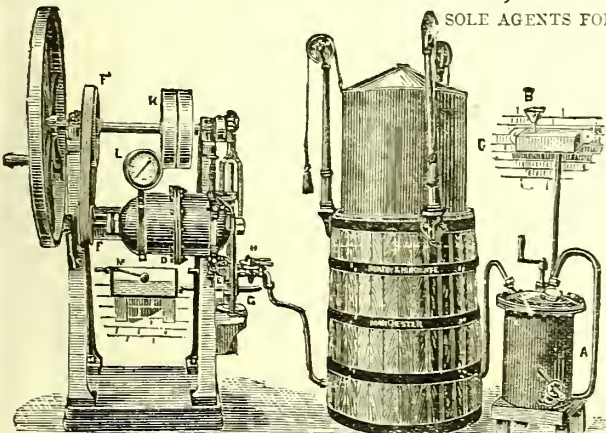
BRATBY & HINCHLIFFE, 43^C Pott St., Ancoats, Manchester,

SOLE AGENTS FOR JAMES GALLOWAY, OF BOLTON, AND HIS NOW FAMOUS

Lilliputian Soda Water Plant,

See Engraving,

Which is made specially for new beginners & small makers.



No. 1 Plant makes 400 doz. per day, and is fitted with 1½ Pump and 2 gall. Cylinder, with Gasometer and Generator. PRICE £52 10s. No extras.

No. 2 Plant makes 600 doz. per day, and is fitted with 2½ Pump and 4 gall. Cylinder, with Gasometer and Generator. PRICE £63. No extras.

Descriptive Circular forwarded post free on application.

Every Purchaser of Soda Water Machinery should obtain our "MONTHLY LIST" of New and Secondhand Appliances, and also our Circular and Price List of Specially Prepared *Deserized Soluble Essences and Essential Oils* and other Drugs used by the Trade, which are much stronger and 30 per cent. cheaper than is usually offered.

BRATBY & HINCHLIFFE, 43^C Pott St., Ancoats, MANCHESTER.

FOR SUMMER.

RASPBERRY
STRAWBERRY
LIME FRUIT
BLACK CURRANT
LEMON, ORANGE
JACONELLE PEAR
PINE APPLE

In Bottles, 1/9,
Half Bottles, 1/-

FOR WINTER.

AROMATIC
BLACK CURRANT
GINGERETTE
GINGER LEMON
PEPPERMINT
CLOVE
WINTER PUNCH
LIME FRUIT
CORDIAL

In Bottles, 1/9,
Half Bottles, 1/-

By the simple addition of two table-spoonfuls of these syrups to a tumblerful of hot or cold water, most wholesome and refreshing drinks are immediately prepared, as pleasant to the taste as they are invigorating to the system. For Gazogenes and the Syphon Soda Water Bottles they are admirably adapted. Put into a tumbler a large spoonful of any of the Syrups, and fill it up with the Gaseous Water. Largely used for flavoured Puddings, Jellies, Custards, and Blanc-Mange, and are specially suitable for the Sick Room, Pic-nic, Weddings, Christmas and Birthday Parties, &c., &c.

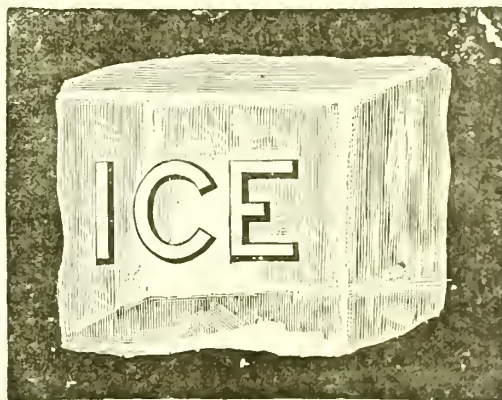
Sole Manufacturer—W. BECKETT, Heywood, MANCHESTER.

Wholesale Agents—Borelay & Sons; Sanger & Sons; Edwards & Sons; Sutton & Co., &c., &c.

FOREIGN

Mineral Waters and Zoedone.

FREDERICKSHALL (5 Cases, 6d. per Case less), 24 1/2 Cases, 30 bot.; 34 Cases, 60 1/2 bot.
APOLLINARIS (10 Hprs., 1/- and 1/6 less), 24 Cases, 50 bot.; 36 1/2 Hpr., 100 1/2 bot. Hampers free.
HUNYADI JÁNOS (10 Cases 3/- and 5/- less), 30/- Case, 25 bts.; 50/- Case, 50 1/2 bts.
BELTZER ... 11/- Hpr., 25 bts.
... 15/- Hpr., 50 1/2 bts.
PULLNA ... 18/- Case, 20 bts.
... 30/- Case, 50 1/2 bts.
VICHY ... 31/- 50 bts.
... 27/- 50 1/2 bts.
CARLSBAD ... 37/- 50 bts.
KISSENGEN ... 42/6 50 "
SCHWALLBACH ... 27/6 50 "
TROMBURG ... 37/6 50 "
WILDUNGEN ... 40/- 50 "
CARLSBAD SALTS, 1/2 Bots., 20/- per doz.; 1/4 Bots., 40/- per doz.; Bot., 80/- per doz.
ZOEDONE, 5/- per doz., 6-doz. Cases (if 5 Cases, 2d., 10 Cases, 3d., 20 Cases, 4d. per doz. less).



REGISTERED AT STATIONERS' HALL.

Norway Block Ice.

ORIGINAL BLOCKS ... 19 per cwt.
1 cwt. to 2 cwt. ... 2/6
1/2 cwt. to 1 cwt. ... 1d. per lb.

Packing and Mats for Original Blocks free 3d. each allowed for Mats if returned.
Present Season's Ice specially fine and extra thick. Low quotations given for quantities taken from Vessels while discharging.

PRINTED DIRECTIONS for STORING ICE sent free on application.

W. B. HARRISON,
IMPORTER OF ICE AND
MINERAL WATERS,
6 Bridge Street, Sunderland.

Railway Carriage Field.
Terms, 5/- per doz. in
quarterly payment;
5 per doz. delivered on
cash with order.



Each, 6/- per doz.,
bottles included.
Corks and Showers
free.

NOTICE.

TO ALL CHEMISTS AND DRUGGISTS
IN THE KINGDOM.

THE SHELFANGER.—This delightful
effervescent Antacid and Tonic Table
Water, after March 1st, 1882, can only be
obtained direct from the Spring, in Cases
of 3 dozen each, half-pints.

PROPRIETOR—
"SHELFANGER" SPRING, NEAR DISS.

Discovered by a Member of the Royal College of Surgeons of England.

This natural Antacid and Tonic Mineral Water claims to be a most valuable medicinal beverage, in that it possesses the proper proportion of the Carbonates of Magnesia and Iron, which can neither relax nor build the system, exerting only the tonic and invigorating virtue of Iron and the corrective property of Magnesia. The proportion of these most important ingredients is such that it may be taken as ordinary Table Water for 2, in short a single effective salt, and azeable Alkaline Chlorophate. It is particularly recommended by some eminent members of the medical profession for the Gout, Rheumatism, Arteritis, Debility, and Weak Digestion, and when a condition requires Tonicity and Vigour. Epilepsy and Hemiplegia have been materially benefited under its dietetic use, showing it to be of great value in imparting tone to the nervous system. The Water, as stated, may be procured from the above Mineral Water Importers, and on recommendation of medical men. Invalids of the upper class are received at the Spring, where the climate is invigorating, and consumption unknown; and in a county where "more than 80 persons have outlived their fourth year within a period of less than 40 years."—White's History of Norfolk.

Extract from Analytical Report by Professor ATFIELD, Ph.D., F.R.S., F.I.C., F.C.S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain.

"The 'Shelfanger' is a valuable Magnesian Antacid and Tonic Chlorophate Water."—JOHN ATFIELD.
From THOS. COLE, Esq., M.D., M.R.C.P. Lond., Physician to the Royal Finsbury Hospital, Bath.
"The Shelfanger Mineral Water is Antacid and Chalybeate. I would therefore strongly recommend it in many Dyspeptic conditions, Suppressed Gout, and Anæmia."

From CHAS. WHITEY, Esq., M.B., Leamington.
"I am much inclined to believe that the Shelfanger Mineral Water will ere long become a popular beverage with Gouty, Debilitated, and Anæmic Invalids."

From FREDK. THORNE Esq., M.P.C.S., &c.
"I have tried the Shelfanger Mineral Water, and find that it possesses all the characteristics claimed for it, and it is, moreover, very agreeable, which cannot be said of most Chalybeates."

PROPRIETOR—

THE "SHELFANGER" MINERAL SPRING, NR. DISS.

VALLET'S PATENT.



Fig. 3.



New Stopper.

The Stoppers are made in six different sizes—Nos. 1, 2, 3, 4, 5, and 6. Nos. 4, 5, and 6 are most suitable for general use, the Bottles adapted to which having sufficient capacity in the mouth to allow a copious flow of the liquid, whilst Nos. 1, 2, and 3 are specially made for Bottles which have only a small mouth, thus retarding the flow of the liquid, and causing the evaporation of the carbonic acid gas before the Bottle can be emptied.

ROYALTY FREE.

All Communications to be addressed to

**L. VALLET, 49 Everton Road,
LIVERPOOL.**

Fig. 2.—THE STOPPERED AND FITTED BOTTLE.



ADVERTISE A GOOD THING.—SHAKESPEARE.

STERLING VALUE—LOW PRICES—STEADY PROGRESS—INCREASED SALE—

Characterise

WILCOCKS' High-class

SODA WATER MACHINES AND BOTTLING APPARATUS.

(WORKS: BACK STREET, BATH.)

REMARKABLE TESTIMONIAL.—At one of the exhibitions at the Agricultural Hall the publisher of this journal (THE CHEMIST AND DRUGGIST) was talking to me at my stand, when a gentleman unknown to me came up, and without any preamble (after asking if I was Mr. Wilcocks), expressed his great satisfaction with one of my full-sized "Favourite" machines, which he had seen advertised in THE CHEMIST AND DRUGGIST, and had consequently purchased.

RECENT CASE.—We had a customer here a few weeks ago from Sharnford, who had been recommended to us by a previous purchaser at Grantham. Our new customer would have a machine exactly like the one he had seen, and made after the new pattern. We made one again on the old pattern.

The court investigation of our machines. All of our sales result from the recommendations of previous customers; and we can produce numerous cases of clients who have inspected many aerated water factories and have placed their orders with us.

We shall be obliged if any one thinking of commencing the business will write to us. Whether business results or not we shall be glad to have the opportunity of quoting and advising.

Those who may be prejudiced against our machines by reason of their low prices are invited to examine closely into our factory and the machinery in process of construction at all stages. We are also favoured by several of our customers with permission to introduce intending purchasers to their works, where our machines can be seen at work.

We have a machine in daily use here, making drinks for our workpeople only. This can always be seen, and we furnish recipes and all required instruction to every purchaser.

"THE FAVOURITE."

NEW PATTERNS FOR 1882.

All Wilcocks' "Favourite" Machines are made on the Bramah Principle, pure and simple, and they produce a highly-charged gaseous water.

The forged cranks are of best wrought iron, of immense strength, in massive cast-iron standards with big fly-wheels. The condenser, toothed wheels and pump, and index cocks are of best selected polished gun-metal, and are unrivalled as specimens of the founder's art. The condensers are fitted with agitators after the approved mode, and carefully lined with the best obtainable English tin, after the approved mode. They are fitted together with bolts and nuts, so that they can be easily taken apart for examination. The plunger of the pump works up underneath the pump, through a ring or collar of the capped leather valve-box at the top of the pump.

An important feature in our machines is the goodly size, as well as the strength of our gas work. The generator is made of stout lead; one end is easily removable, being fastened on with bolts and nuts; the shaft is of wrought copper, on which are fixed gun-metal rousers, and the connections, inlet and outlet, &c., are of gun-metal; the tubes of stout oak strongly hoop'd; and the gasholder of copper. These machines have had our constant study for years past; beautiful in design, and carefully finished, and will bear comparison with any machine in the market.

WE HAVE NOT ADVANCED OUR PRICES.

Wilcocks' Full-size "The Favourite," Bramah Principle, Soda Water Machine, with 1½-in. Pump and Gun-metal Polished 2-gallon Condenser, and extra size Gasometer and Generator, with Strap Pulley and Handle, Dial Pressure and Water Gauges, Quadrant, Corking Rack for filling corked bottles, and "Eclipse" Filling Machine, on stand, for patent internal stopper bottles (Solution Pan is fitted with Buoy Valve, all pipes fitted and tested here by actual work before sent off), and Spanners

£58 0 0

If packed in three extra strong iron-bound cross-battened cases for export, total weight one ton, add extra

£4 10 0

Ditto, as above, to make 600 dozen per day, with 2-in. Pump and 3-gallon Condenser, &c., with Gas work and Two Racks

£68 0 0

If packed in three extra strong iron-bound cross-battened cases for export, add extra

£6 10 0

Ditto, as above, to make 1,000 dozen per day, with 2½-in. Pump and 4½-gallon Condenser, &c., with Gas work and Two Racks

£80 0 0

If packed in three extra strong iron-bound cross-battened cases for export, add extra

£7 10 0

Ditto, as above, to make 1,500 dozen per day, with 2½-in. Pump and 7½-gallon Condenser, with Gas work and Two Racks

£111 10 0

If packed in three extra strong iron-bound cross-battened cases for export, add extra

£9 10 0

Ditto, as above, to make 200 dozen per day, with 1½-in. Pump and 1½-gallon Condenser, with Gas work and Two Racks

£45 10 0

If packed in three extra strong iron-bound cross-battened cases for export, add extra

£3 15 0

Wilcocks' "Eclipse" Filling Machine for all the internal Stopper Bottles. We invite attention of Bottlers, as we believe it to be the Simplest and best in the Market. Is now made from all New Patterns for 1882, and cannot get out of order. A boy or girl can work it as well as a man.

W. G. WILCOCKS, BATH CITY FOUNDRIES & IRONWORKS, BATH, SOMERSET.

CHEMISTS' AERATED AND MINERAL WATERS ASSOCIATION

(LIMITED).

Manufacturers of MINERAL WATERS IN GENERAL, AND ALSO THE SPECIALITIES.

SPARKLING LIMINE.

A Delicious Lime Fruit Beverage, Free from a Musty Flavour.



Of Chemists, 5/6 and 8/6 per dozen.

Contains no Iron, no Phosphorus, but FRUIT AND VEGETABLE PRODUCTS ONLY.



Of Chemists, 5/6 and 8/6 per dozen.

SPARKLING RUBINE.

THE WATERS BEING OF FIRST QUALITY, A TRIAL IS SOLICITED.

Offices and Factories—45 Gifford Street, and 112 Pembroke Street, Caledonian Road, London; and Harrogate.

JEWSBURY & BROWN'S MANCHESTER

MINERAL WATERS,

PURE SODA, SELTZER, POTASH, LITHIA, &c.,
LEMONADE,
GINGER ALE, AND QUININE TONIC.

Prepared and Bottled specially for Export, and warranted to keep well.

Manufactured with the utmost care and by improved machinery, these productions are recommended for purity and excellence of quality by many leading members of the Medical Profession, and have for many years had a preference by the public; the flavour of the Lemonade and Ginger Ale being procured from the fresh Fruit and Finest Jamaica Ginger, they may be relied upon as furnishing delicious and satisfactory beverages, either for general use or specially for invalids.

The Soda Water is absolutely free from any metallic impregnation, and being by improved machinery highly charged with Carbonic Acid Gas, and each bottle containing a definite and unvarying proportion of Pure Carbonate of Soda, J. & B. have every confidence in inviting a trial from those who have not already patronised them.

The Seltzer, Potash, and Lithia Waters are prepared with the utmost exactitude and the purest ingredients.

The New Quinine Tonic furnishes a pleasant form for the administration of a most valuable restorative, and is refreshing and agreeable.

Ginger Ale (Aromatic) of superior quality, and strongly recommended as a Non-Alcoholic and warm stimulant beverage.

N.B.—Every Bottle is protected by a distinctive Label, with Name and Trade Mark, and each Cork is branded.

Counter Bills and Analytical Reports, with Agents' Names and Addresses, supplied when requested.

A CERTIFICATE OF MERIT, for superiority of quality, was awarded to Jewsbury & Brown at the Exhibition of Sanitary Appliances, at Owens College, Manchester, on the occasion of the Meeting of the British Medical Association, August, 1877.

Sanitary Institute of Great Britain, after a deferred PRACTICAL TRIAL AND EXAMINATION, July 4th, 1878.

JEWSBURY & BROWN, 44 Downing Street, 3 Grosvenor Street, and 113 Market Street, MANCHESTER.

GLENN'S FAMOUS
ANTI-DIABETIC MINERAL WATERS,
the best "and most efficacious Waters," from Waukesha, U.S.
 Cure for Diabetes, Bright's, Dropsy, Liver, Bladder,
 Stone in Bladder, Dyspepsia, & all Kidney Diseases.
 DOCTOR MINISTER writes:—"GLENN'S Water has done me immense
 good; in fact it has made a new man of me."
GLENN'S (U.S.) PURE GLUTEN FLOUR SUPPLIED.

AGENT ALSO FOR THE
A. AND GENUINE BETHESDA MINERAL WATERS,
 ESTABLISHED IN 1877, and sold ever since.

'EUPHORBIA PILULIFERA,'
 The great Australian Remedy for Bronchial Asthma,
 Catarrhs, Asthma, Congestion of Lungs, Consumption,
 Coughs, Kidney, Chest, and Respiratory Organs'
 Complaints.

Testimonials by Physicians, Ministers, and others, of the remarkable
 efficacy of these Remedies that have cured many, from
T. PENROSE, 28 ORTS ROAD, READING.

'ABSOLUTELY PURE.'

SEE ANALYSIS. Sent post free on application.

ELLIS'S



REGISTERED.

KS BRANDED "R. ELLIS & SON, RUTHIN," and every
 label bears their Trade Mark. Sold everywhere, and wholesale of

ELLIS & SON, RUTHIN, NORTH WALES.

Local Agents: W. BEST & SONS, Henrietta St., Cavendish Square.

Soda, Potass,
 Seltzer, Lemon-
 ade, also Water
 without Alkali.
 For GOUT,
 Lithia Water, &
 Lithia &
 Potass Water.

RUTHIN

WATERS.

T. & F. J. TAYLOR'S



AERATED WATERS,

Newport Pagnel.

ESTABLISHED 1835.

**A, POTASH, SELTZER, AERATED (without
 Alkali), and LITHIA WATERS,
 LEMONADE AND GINGER ALE.**

*Bottle is protected by a Label bearing the Signature
 of the Firm.*

and Excellence of the Water certified by Analysis
 by Professor ATTFIELD, Ph.D., F.C.S.

BINGLEY'S



ANALYSED

MANUFACTURED BY

**IN BINGLEY, Pharmaceutical Chemist,
 NORTHAMPTON.**

Copy of Professor Attfield's Report will be forwarded by
 post on application.

**SODA WATER.
 SELTZER.
 POTASH.
 LEMONADE.
 LITHIA, &c.**

W. J. BUSH & CO.,

Distillers and Importers of

Essential Oils & Fruit Essences,

SPECIALITIES FOR AERATED WATER AND CORDIAL MANUFACTURERS,

ESSENCE LEMON,

EXTRA SUPER QUALITY,

The only pure Essence imported, made at our Works at Sicily.

ESSENCE GINGER ALE,

For Winter Drinks.

TONIC ESSENCE,

FOR BITTER WATER.

Soluble Essence Lemon.

SOLUBLE ESSENCE GINGER.

SOLUBLE ESSENCE OF PEPPERMINT.

BEWARE OF SPURIOUS IMITATIONS.

W. J. B. & Co. caution the Trade against the so-called
 Soluble Essences now so frequently offered for sale,
 which are nothing more than mere Tinctures; and
 although offered at lower prices, cost 5 or 6 times as
 much in use, whilst imparting a strong medicated
 flavour. W. J. B. & Co. further beg to inform their
 friends that Aerated Drinks as Pale Ale, Horehound
 Beer, &c.—made from their Soluble Essences are exempt
 from Excise regulations.

NONE OTHERS ARE GENUINE.

CAUTION.

W. J. BUSH & CO. regret having to caution the trade
 against spurious imitations of this article, most of which
 being mere rubbish.

GUM EXTRACT

(French Cream),

PROTECTED BY ROYAL LETTERS PATENT,

*For producing a Permanent Head of Creamy Richness on
 Ginger Beer, Ginger Ale, Lemonade, and other Aerated
 Beverages; also on Beers, Ciders, Wines, &c.*

2s. 6d. per lb.

**TO MAKERS AND VENDORS OF EFFERVESCING
 DRINKS, AND TO THE PUBLIC GENERALLY.**

IN the High Court of Justice—Chancery Division—on Thursday,
 June 10, 1880, before Vice-Chancellor Sir C. Hall, an application
 was made in the action of Bush v. Young to commit the defendant
 to prison for disobeying an injunction whereby he had been restrained
 from selling, imparting, or publishing a recipe, which is an infringement
 of a certain patent known as "Gum Extract," the property of
 the plaintiff, which is used in the mineral water trade for giving a
 creamy head or foam to ginger beer and other beverages; the defend-
 ant having published and sold a recipe for the preparation of the
 same compound under the name of "Compound Fluid of Sappaca-
 nium," to be used for the same purpose. The defendant resisted on
 the ground that the bark used by him was not the same as that
 used by the plaintiff, being known as "Panama Bark."

The plaintiff, however, proved that this was in fact the same, and
 the Court granted the injunction. The defendant also threatened to
 publish the recipe unless it were bought up by the plaintiff.

His lordship made an order that in default of defendant paying
 the costs, he should stand committed to prison.

*All persons infringing the above patent, either by selling or using,
 will be proceeded against, and those who give information of
 such infringement will be liberally rewarded.*

W. J. BUSH & CO.,

20-23 Artillery Lane, Bishopsgate, London, E.

HAY'S GINGER CHAMPAGNE

CAN BE OBTAINED FROM THE SOLE AGENTS.

INGRAM & ROYLE, 119 Queen Victoria Street, LONDON, E.C.,
AND BATH BRIDGE, BRISTOL.

Price, in Half Champagne Bottles, 5s. 6d. per dozen.

This SPARKLING, EXHILARATING, and REFRESHING DRINK, while being far more agreeable in bouquet and flavour than the FINEST CHAMPAGNE WINE, is, at the same time, unlike it, FREE from ALCOHOL.

Samaritan Free Hospital, Lower Seymour Street,
Portman Square, London, W.

Dear Sir,—I have tried your Ginger Champagne, which I find to be excellent, and I look upon it as a step in the right direction towards meeting a long-felt want. Our Senior Physician, Dr. Henry Savage, has also tried it, and is much pleased with it. We ought long ago to have had such a beverage, and I believe that a great deal of drinking would thus have been prevented. I wish your effort much success.

I am, dear Sir, yours faithfully,
GEORGE SCUDAMORE, Secretary.
52 Montague Square, London, W.

Sir,—I am able to state that your Ginger Champagne is excellent and most refreshing. It will, I trust, supersede those cheap alcoholic drinks that meet us at many inns and railway stations, and which are often the only drinks to be had. In providing this beverage you have greatly assisted the cause of temperance, and I shall recommend it largely.
C. H. F. ROUTH, M.D.



It is strongly recommended both for Juveniles and Adults, &c., as the most Wholesome Stimulating Beverage that has hitherto been introduced, and should be in every household during all seasons of the year.

19 Oxford Terrace, Hyde Park, London, W.
I have tried Hay's Ginger Champagne and like it extremely. I consider it is infinitely superior to the numerous non-alcoholic beverages now so largely advertised. It is an invigorating and refreshing tonic beverage, and, as such, I can confidently recommend it.

W. DOMETT STONE, M.D., Phys. Finsbury Dispensary.
An excellent and most agreeable beverage.—*The Lancet*.
Made by Mr. Hay, of Hull, with his well-known SOLUBLE ESSENCE OF JAMAICA GINGER, takes rank as a PURE, WHOLESOME, STIMULATING, and NON-ALCOHOLIC beverage.—*British Medical Journal*.

One of the most delicate and wholesome drinks in the market.—*Medical Press*.

This is a beverage which the practitioner can safely recommend.—*Medical Times and Gazette*.

Mr. Hay, of Hull, deserves abundant success with his Ginger Champagne. It is an exhilarating, wholesome, and very agreeable beverage.—*The Chemist and Druggist*.

Sole Manufacturer, W. HAY, Chemist, &c., 4 Regent's Terrace, HULL.

In Champagne Pints.
Bin Cases hold 3 dozen each.
Carriage paid on Goods and
Empties.

"A TRUE BRAIN & NERVE TONIC."
Kinmond's
SPARKLING
Phosphorettä,
A DELICIOUS, SPARKLING BEVERAGE FOR DAILY USE,
EXHILARATING YET NON-ALCOHOLIC.

Cases and Bottles are charged
separately,
and allowed for in FULL when
returned.

Trade Terms and Handbills, with Retailer's name and address on, free.

APNEUMATIC

GINGER ALE (Aromatic).



MINERAL WATERS

ORANGE CHAMPAGNE.

GUARANTEED FREE FROM ALL IMPURITIES.

Our terms are more favourable for a family trade than those of any first-class makers.

KINMOND & CO., late J. DAILY & CO., LEAMINGTON.

Trade List and Descriptive Pamphlet of the Apneumatic process free on application.

TO BOTTLEERS OF MINERAL WATERS AND AERATED DRINKS.

N. G. **"ECLIPSE"** for
 Wilcocks' 1882

UNEQUALLED AND UNRIVALLED

TURNOVER FILLING MACHINE.

With Recent Improvements,
 FOR BOTTLING
 CODD'S, LAMONT'S, DISC,
 BARRETT & ELMERS',
 And all other Patent internally-
 stoppered Bottles.

£4 10s. **£4 10s.**

THIS MACHINE HAS EARNED A WORLD-WIDE REPUTATION.
 ON COMPARISON WITH OTHERS IT IS PRE-EMINENT.

It has the most simple action	Therefore is the least likely to get out of order.
It fills and syrups all internally stoppered bottles	Small or large, and of any shape.
It is worked with marvellous rapidity	The most ignorant person can work it at once.
It can be attached to any machine	English, French, American, or any other.
It has no ground-in cocks, valves, or plugs	All its parts are simply constructed.
It fills and syrups by one motion	A boy or girl can work it.
It bottles drinks highly charged with gas	With less pressure in the cylinder.
It therefore economises gas	Its rapid action economises time.
Its simplicity economises labour	Its cheapness economises cost.

We manufacture these Machines with massive castings, cast in our own foundry, which has always had a high local reputation for the superior castings turned out.

We always have a number of these Machines in process of manufacture.

We always have one at work bottling drinks for our workpeople only.

We are always glad to show the Machines to probable customers, in any stage and in action.

We have had hundreds of testimonials from parties who have purchased them.

We have never had one returned which we have sent out for a fortnight's trial.

We receive continually more and more orders for these Machines.

The **"ECLIPSE" FILLING MACHINE** is the best and cheapest in the market. It is sound and strong in every part, and the workmanship throughout is of the highest class. It soon saves its first cost by its rapidity. It saves gas, and cannot waste the syrup. The syrup pump is certain in its action. Can be adjusted with the greatest nicety from zero to two ounces. It will not syrup a bottle twice, and cannot miss once. One motion only required to throw the pump out of gear for bottling plain soda or non-syrup drinks.

"ECLIPSE" Filling Machine, to bolt to a Bench	... ..	£4 10 0
Handsome Cast-iron Standard, extra	... .. add.	1 0 0
Syrup Pump	... ..	3 0 0
Packed complete, as above, in extra strong, extra Iron-bound Packing Case for Export	... .. add.	0 15 0

SOLE MAKER:

N. G. WILCOCKS, SODA WATER MACHINIST, **BACK STREET, BATH.**

GLASS BOTTLES

OF EVERY DESCRIPTION FOR THE MINERAL WATER TRADE.

CHEMISTS, PERFUMERS, &c.

SYPHONS

OF THE BEST FRENCH MANUFACTURE.

Cash Buyers should apply for Samples and Prices before placing their Orders.

J. MOUNTAIN & CO.,

83 FINSBURY PAVEMENT, LONDON E.C.
ESTABLISHED 1853.



EUGENE GERAUT & CO.



SELTZOGENES.

1873. For immediate production of Eau de Vichy, Soda Water, Sparkling Lemonade, and Aerated Waters. First introduced by EUGENE GERAUT & Co. in 1853.

3-pint Size, Wire, 13 0; Cane, 13 6
5-pint " " 18 0; " 19 0
8-pint " " 30 0; " 32 0

Strongly silver-plated top, 5 each extra.

3 pint size, strongly silver-plated, richly decorated porcelain stands, 30 each; 5-pint size, ditto, ditto, 35 each; 8-pint size, ditto, ditto, 48 each.

Our well known Seltzogenes are improved yearly, and have already stood a public test of upwards of Twenty Years, and are acknowledged as **THE VERY BEST.**

POWDERS FOR THE ABOVE:—3-pint, per dozen boxes, 22; 5-pint, ditto, 36; 8-pint, ditto, 65.



SYPHONS.

Clear or coloured glass, pure ENGLISH BLOCK TIN TOPS, with piston or cap.

226

per dozen, for quantities of not less than one gross.

Packing in Cask, 5 p r gross.

The Name marked on the metal's free of charge for quantities of not less than one gross.

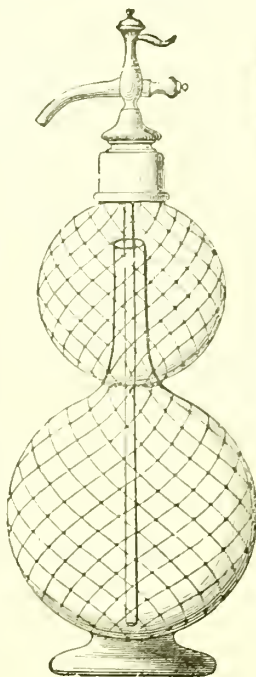
The Name engraved with Trade Mark, from 1 s. to 2/ per dozen extra.

Illustrated Catalogue on application.

Large Discount.

1 & 2 Corporation Buildings, Farringdon Road, London, E.C.

MELBOURNE EXHIBITION.
FIRST ORDER of MERIT awarded to THESSIER-FÈVRE.



TRADE MARK.

D. Fèvre
REGISTERED.

CELEBRATED

D. FÈVRE SELTZOGÈNES & POWDERS

For immediate production of Soda Water, Eau de Vichy, Sparkling Lemonade, and Aerated Wines.

D. FÈVRE, 398 RUE ST. HONORÉ, PARIS,

Sole Inventor and Proprietor of the Article and Name "SELTZOGENE,"

THESSIER-FÈVRE, Son-in-Law, Manufacturer.

WHOLESALE PRICES.

Celebrated D. Fèvre Seltzogene.	{	3 pint, wire covered	...	12s. 0d. each.	} Liberal discount allowed.
		3 pint, cane covered	...	12s. 6d. "	
		5 pint, wire covered	...	18s. 0d. "	
		5 pint, cane covered	...	19s. 0d. "	
		8 pint, wire covered	...	30s. 0d. "	
Case and Packing	...	12 Seltzogenes, 3 pint size	...	4s. 0d. net.	
" "	...	12 " 5 "	...	5s. 8d. "	
" "	...	6 " 8 "	...	9s. 8d. "	
Celebrated D. Fèvre Powders for the Seltzogenes.	{	3 pint, per doz. boxes of 12 charges,	...	24s. 0d.	} Liberal discount allowed.
		5 " " "	...	36s. 0d.	
		8 " " "	...	60s. 0d.	
Pure Tartaric Acid and Bicarbonate of Soda in the highest state of perfection.	{	3 pint, per doz. boxes of 10 charges,	...	20s. 6d.	
		5 " " "	...	30s. 6d.	
		8 " " "	...	45s. 2d.	

EXTRA:—Taps, Tubes, Valves, Washers, &c.

DIRECTION FOR REPAIRS.

DRIP CATCHERS, FITTINGS, MEASURES, &c.

ALL MY GOODS ARE TESTED.
ILLUSTRATED CATALOGUE FORWARDED FREE.

Hunyadi János

CAUTION.—Circumstances which have come to the knowledge of Andreas Saxlehner, Buda Pest, Sole Proprietor of the Hunyadi János, compel him to WARN the British Public against SPURIOUS IMITATIONS. To secure genuineness, purchasers should see that every bottle has on the LABEL the name of "THE APOLLINARIS COMPANY (LIMITED), London."

NEW AND IMPORTANT DISCOVERY.

GINGER ALE

FROM PURE JAMAICA GINGER.



the health of using Ginger in the Manufacture of "Ginger Ale," and at the same time having a CLEAR and SPARKLING DRINK, has, after much labour and expense, been thoroughly overcome by

Messrs. HARSTON & CO., of LEEDS.

Caution

W. A. ROSS, the Original Patentee and Maker of The Celebrated Belfast Ginger Ale, cautions the Public that the "GENUINE" can only be had at

Ross's Royal Ginger Ale
AND
Aerated Water Works Belfast.

NAME ON CORK, CAPSULE, AND LABEL REGISTERED.

EXPORT ORDERS HAVE SPECIAL ATTENTION.

Prize Medals—
YORK, 1879. SYDNEY, 1879. MELBOURNE, 1880. ADELAIDE, 1881.

THE

BRITISH SYPHON MANUFACTORY,
EUGSTER & KOERTGEN, Proprietors,
2 Gresham Buildings, Basinghall Street,
WORKS: LAMBETH, S.E. LONDON, E.C.



SELTZOGENES.


3 pint size, wire, 13s.; cane, 13s. 6d.
5 " " " 18s.; " 19s.
8 " " " 30s.; " —

Silverplated top or wire, 5s. extra.

Drop Cups, Measures, &c.

LIBERAL DISCOUNT FOR QUANTITIES.

IMPORTANT.

In ordering our Seltzogenes through Agents distinctly state that you require the "Lien and Shield" Brand, and see that you get others inferior or are substituted. All stamped thus:  GUARANTEED first-class

PERFECT, and of workmanship.

SYPHONS.

Short Levers, 22 6; Long Levers, 24 — per dozen net.

WHITE, BLUE, AMBER, OR GREEN BOTTLES. CYLINDRICAL OR OVAL SHAPED.

SILVERPLATED TOPS FROM 8s. PER DOZEN EXTRA. Name stamped on metal tops free for one gross.

Name and Trade Mark engraved on the bottles by the acid process from 1½d. to 2½d. each extra.

Soda Water Machinery.

NEW AND IMPROVED CONTINUOUS APPARATUS With one or two Pumps.

GENERATORS, WASHING VESSELS, GASOMETERS, SYPHON FILLING AND SYRUP DOSING MACHINES.



EACH SELTZOGENE AND SYPHON THOROUGHLY TESTED BEFORE SENT OUT. ALL METAL WARRANTED FREE FROM LEAD.



SODA WATER MACHINERY.

MONDOLLOT'S PATENT.

The chief features of which are the entire suppression of the Gasometer and all its disadvantages, economy of materials, and saving of labour.

Notwithstanding the short time this Machine has been put before the Public, over 400 Machines are already in use all over the World.

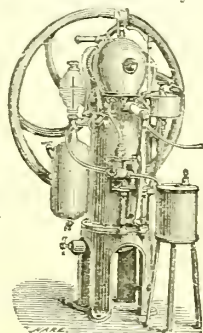
Every Machine is fitted with two large Purifiers, in which the Gas is thoroughly cleansed from all impurities and is free to expand.

No Gasometer.

No danger of Explosion.

No skilled labour required.

No previous knowledge necessary.



The Cheapest Machine.

The Most Compact.

The Most Simple to Work.

Being Entirely Automatical.

"When explained it is simplicity itself. . . . The fact of the economy of skilled labour and the saving of materials being the chief and most important points." — *The Mineral Water Trade Review and Guardian.*

"There is no ordinary generator or gasometer in connection with this machine, and therein lies the secret of its advantage over the ordinary English Machines." — *The Mineral Water Trade Recorder and Advocate.*

and Syphon Filling Stand, Syphons, Syrup pump, and all necessary appliances. A New and exhaustive Catalogue is now in the press, and will be sent, when ready, on application to

FAVARGER (Late MONDOLLOT) & CO., Limited,

No. 1 Machine, complete. Prices from £28.

75th TURNMILL STREET, LONDON. CLERKENWELL, E.C.



PARIS, 1878.

PHOSPHODONE

NON-ALCOHOLIC.

"A carefully-prepared beverage. . . . Pure, wholesome, and exhilarating. . . . The mineral matter held in solution is chiefly in the form of hypophosphites, of which each bottle contains about one grain."—*Extract from Analysis.*

PHOSPHODONE.

"Is undoubtedly one of the most desirable beverages introduced. The water, which forms the primary constituent, is exceptionally pure, and the scientific analysis is entirely satisfactory. The increasing popularity of Phosphodone testifies to the merits of this refreshing and invigorating drink, which has already developed into a widespread reputation in the Colonies and foreign parts."—*British Trade Journal.*

PHOSPHODONE.

"A much-prized preparation among consumers of non-alcoholic drinks. All Mr. Skinner's goods may be catalogued as refreshing, wholesome, and palatable . . . above the ordinary run of aerated waters."—*European Mail.*

PHOSPHODONE.

"Samples are seen of the materials employed . . . and the examination of these substances assists one in forming a high opinion of the articles produced, and of the certainty that purity and wholesomeness are fully maintained in every department of the manufacture."—*Sanitary Engineer.*

PHOSPHODONE.

The Medical Profession and other correspondents may be furnished with the Alkaline Strength of the Mineral Waters, and other important information, as well as detailed Analyses, Medical Commendation, Press Notices, Testimonials, and Scientific Authorities. See Analyses by Professors Wanklyn, Heisch, &c.

WHOLESALE AGENTS—

BARCLAY & SONS, 95 Farringdon Street.

BEST & SONS, 22 Henrietta Street.

EDWARDS & SONS, 157 Queen Victoria St.

EVANS, GADD & CO., Exeter.

HOVENDEN & SONS.

INGRAM & ROYLE, 119 Queen Victoria St.

" " Bath Bridge Bristol.

LYNCH & CO., Aldersgate Street.

NEWBERRY & SONS, King Edward Street.

SANGER & SONS, 150 Oxford Street.


SUTTON & CO., Bow Churchyard.

W. TULLOCK & SONS, Bury Street.

Retailed at 5/6 per dozen, Champagne Pints (bottles included).

Chemists may obtain advantageous terms from the Wholesale Agents.

PROPRIETOR: G. H. SKINNER, ST. KERRIAN WORKS, EXETER.

 **PRIZE MEDAL** awarded, International Food Exhibition, 1881; and Highest Award of Merit, Sanitary Institute of Great Britain, 1880; for Skinners' Aerated Waters.

HONOURABLE MENTION.

International Food Exhibition, Agricultural Hall, London, October, 1880.

**HAY'S
SOLUBLE ESSENCE
OF
JAMAICA GINGER**

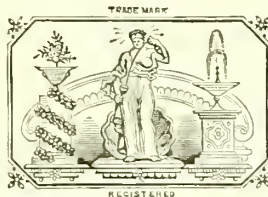
(Guaranteed Pure and Free from Capsicum).

Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d.Highly adapted for the manufacture of *Transparent Aërated Waters*, and for all *Dietetic, Medicinal, and Pharmaceutical* purposes.**Medical Opinions on****HAY'S Soluble Essence of Ginger.**

"Singulantly free from resin."—*The Lancet*.
 "It should entirely supersede the official preparation of the British Pharmacopœia."—*Medical Press*.

Medical Opinions on**HAY'S Ginger Champagne.**

"An excellent and most agreeable beverage." *The Lancet*.
 "Made by Mr. HAY, of Hull, with his well-known Soluble Essence of Jamaica Ginger, takes rank as a pure, wholesome, stimulating, and non-alcoholic beverage."—*British Medical Journal*.

**Medical and other Opinions on the****Ginger Beer made from HAY'S Soluble Essence.**

"An excellent effervescent drink."—*The Lancet*.
 "Preferable to some wines we have tasted under the name of champagne."—*Medical Press*.
 "Clear and transparent, and very pleasing to the palate."—*Medical Times and Gazette*.
 "Has the purest Jamaica Ginger aroma, distinguishable as soon as poured out. It is a beverage fit for any gentleman's table, and ought to attain great popularity."—*The Chemist and Druggist*.

THE COMPOUND ESSENCE

(Guaranteed Pure and Free from Capsicum).

This Essence, which is an addition of **VANILLA, LEMON, and OTHER FLAVOURS** to the above, is strongly recommended for the manufacture of **Ginger Beer, Wines, &c.**, to which it imparts with the **Ginger** a **Peculiarly Fine Fruity Flavour and Aroma**.

Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s.**THE COMPOUND FORTIFIED ESSENCE**Specially adapted for the Manufacture of the **FINEST****GINGER ALE.**

This Essence is strongly recommended for the manufacture of **Ginger Ale** and **Ginger Beer**, to which it imparts the fullest amount of **Pungency** with the **Fine Ginger Aroma** and **Fruity Flavours** of the last-mentioned Essence.

Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s.**HAY'S GINGER ALE ESSENCE,****HIGHLY CONCENTRATED.***This Essence is a complete Bouquet of the finest Ginger, Lemon, and other flavours, in a highly concentrated state.*

Ginger Beer and **Ginger Ale** made with this Essence will possess an amount of **Aroma, Flavour, and Quality** that have hitherto been without precedent, and that will be sure to command a large sale.

THE COST IN MANUFACTURE IS ABOUT ONE FARTHING PER DOZEN BOTTLES.**Trade Price, 9s. per lb.; 12 lbs. and upwards, 8s. 6d.****GINGER ALE EXTRACT****SUPPLIES PUNGENCY, AROMA, COLOURING, AND FLAVOURING.**

This Extract is strongly recommended for the manufacture of **Ginger Ale**, to which it imparts an unusually **Fine Flavour** and **Great Brilliancy**, at a cost of a little under 1d. per dozen bottles.

Trade Price, 4s. 6d. per lb.; 12 lbs. and upwards, 4s.

PREPARED BY

V. HAY, Manufacturing Chemist, 4 REGENT'S TERRACE, HULL.

**Agents—Messrs. HEARON, SQUIRE & FRANCIS, Wholesale Druggists,
 5 COLEMAN STREET, LONDON, E.C.**

V. HAY CAUTIONS THE TRADE against the use of those spurious so-called **SOLUBLE ESSENCES** which, besides having **NO GINGER AROMA**, are **FLAVOURLESS, RANK, and DISAGREEABLE**, and are little more than **TINCTURES OF CAPSICUM**.

FOR YOUNG
AND OLD.

LOUGHTON'S SALIS SALINE.

FOR THE
BLOOD.

THE GREAT HEALTH RESTORER.
IS THE CHEAPEST AND BEST.

SALIS SALINE is a pleasant Effervescent Salt, that Purifies the Blood and Removes all Disorders of the Liver and Stomach, Invigorates the Body, a SURE REMEDY for Gout and Rhenmatism.

SOLE WHOLESALE AGENTS:

NASH BROTHERS & LAWTON, 126 UNION STREET, SOUTHWARK.

THE WELL-KNOWN "LONDON TEAS"
ARE **ONLY** SUPPLIED WHOLESALE BY
THE GREAT TOWER ST. TEA CO.
(LIMITED).

Siftings from Fine Tea	for Retail at 1/4 per lb.
The London Whole-Leaf Tea	„ 1/8 „
The London Broken Tea	„ 1/8 „
The London Two-Shilling Tea	„ 2/- „
The London Two-Shilling Indian Tea	„ 2/- „
The London Assam Broken Tea	„ 2/8 „
AND OTHER FINER BLENDS.	

Order a small Sample Parcel. The Quality never deteriorates.

A. HORATIO JONES, Managing Director.

The Great Tower Street Tea Co. (Limited), 39 Great
Tower Street, London. E.C.

BEDDARD'S
BELGRAVIA TOOTH-PASTE
(REGISTERED)

Is entirely different from any article of the kind, very much
liked by customers, a most effectual dentifrice, and handsomely
put up in large jars,

ONE SHILLING EACH.

WHOLESALE OF ALL PATENT HOUSES.

LIBERAL DISCOUNT TO LARGE BUYERS.

Prepared only by

JOHN BEDDARD,

46 CHURTON ST., BELGRAVE ROAD, LONDON, S.W.

WILCOCKS' CELEBRATED DOUBLE SODA-WATER MACHINE,

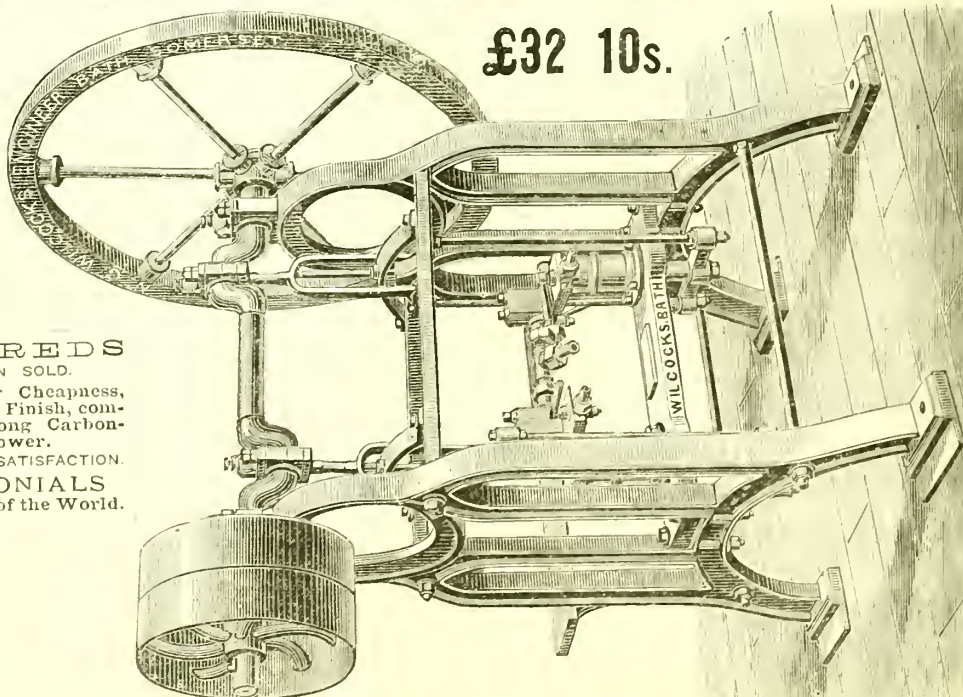
£32 10s.

HUNDREDS
HAVE BEEN SOLD.

Unequalled for Cheapness,
Durability, and Finish, com-
bined with strong Carbon-
ating Power.

ALWAYS GIVES SATISFACTION.

TESTIMONIALS
From all parts of the World.



2½ in. RAM PLUNGER.

N. G. WILCOCKS, SODA
MACHINIST, **BACK STREET, BATH.**

MAIGNEN'S PATENT "FILTRE RAPIDE,"

For the Clarification of all Liquids, Hot or Cold, in small or large quantities.

CLASS B, in Tinned Iron or Tinned Copper, in various sizes, filtering per hour from 1 gallon to 200 gallons of Spirituous Preparations, Tinctures, Decoctions, Syrups, Perfumes, Ethers, &c., &c., from 25s and 50s upwards.

CLASS A, in Tinned Iron and Tinned Copper, for liquids with much sediment, from 1 gallon to 1,000 gallons per hour.

BOUJOU, in Stoneware, for the Laboratory and Dispensary, from 12s. 6d.

Special Filters made of Stoneware or of Wood on the same principle, according to requirements.

The filtering surface of these Filters consists of special cloths, canvas, woollen, or a-hestos, according to the requirements of the liquid to be filtered. These cloths are sufficiently fine strainers for liquids containing much sediment or marc, which by itself forms a filtering medium. But whenever a filtering medium is required, Maignen's Filtering Paper can be used with the Class B or the "Bijou," and Powdered Vegetable Charcoal, or any other powdered filtering medium, with the Class A. The special advantages claimed for this new Filter are—Perfect Filtration, Rapidity, no Evaporation, no Waste. The Filter can be quickly cleansed, and used for different liquids.

The following are a few of the Testimonials received:—

I have had one of Maignen's "Filtres Rapides" in use for some time in this Laboratory, and I find it working very satisfactorily.

We have used your "Filtres Rapides" in our Laboratory now for some time, and I have given them a fair trial; we find them to answer admirably.

We are perfectly satisfied with the way in which your Filter does its work; we are using it for the filtration of medicinal perfumed waters.

We have tried it with a mixture chiefly composed of Syrup of Squill, which has always previously been a great trouble to us to get through filtering paper in the ordinary way, and even when we did so it was not sufficiently bright to satisfy us. However with your new process as much passes through in an hour as before we could get in a day, and it is besides as clear as crystal—in every way the result is very pleasing.

The "Filtre Rapide" I procured from you answers my purpose admirably.

The Filter gives great satisfaction; does its work admirably for the purpose we use it.

We feel we give it more than an ordinary task to perform, owing to the many ingredients we use in the manufacture of our Bovine Wine; but it always produces it bright and clear, though still retaining all its peculiar properties.

THE BOVINE WINE COMPANY (LIMITED).

JAMES LEWIS & SON, Bartlett's Buildings, Holborn, Jan. 16, 1882.

We have much pleasure in stating that your "Filtre Rapide" (two of which are daily at work in our Factory) is a most admirable innovation, and far surpasses anything of the kind formerly used. We can confidently recommend it, as it saves its value in time and labour within a month.

Upwards of 400 Testimonials recently received can be seen at the Office.

FOR FURTHER PARTICULARS APPLY TO THE PATENTEE—

P. A. MAIGNEN, 22 & 23 Great Tower St., LONDON. E.C.

LAMPLOUGH'S EFFERVESCENT PYRETIC SALINE.

HAVE IT IN YOUR HOUSES AND TRAVELS, USING NO OTHER SALINE:

it gives instant relief in Headaches, Sea or Bilious Sickness, and quickly cures the worst form of Eruptive or Skin Complaints. The various diseases arising from Constipation, the Liver, or Blood Impurities, Inoculation, the results of breathing air infected with Fevers, Measles, or Smallpox, are frequently prevented and certainly cured by its use.

The sale of these Saline Salts having greatly increased during the past few years, I beg most cordially to thank those who sell and recommend the same, and also to inform intending dealers that they will find Messrs. BARCLAY, EDWARDS, MAW, NEWBERRY, SANGER, SUTTON, and the Wholesale Houses generally, ready to supply their wants. This Advertisement is found needful in consequence of the trouble, cost, and inconvenience in the keeping and collection of numerous small accounts. *Note.*—The Name, Trade Mark, Labels, Wrappers, &c., are all Registered and Entered at Stationers' Hall.

SPECIAL NOTICE.—Medical Gentlemen having fever cases, and desirous of trying the Saline, can have a single bottle at wholesale prices by sending their cards.

JOHN MACKAY & CO.,

CANNING STREET, EDINBURGH,

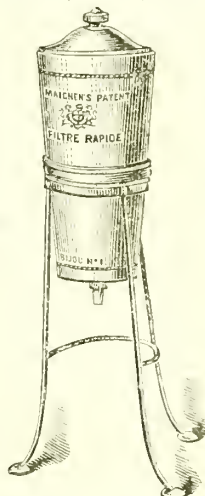
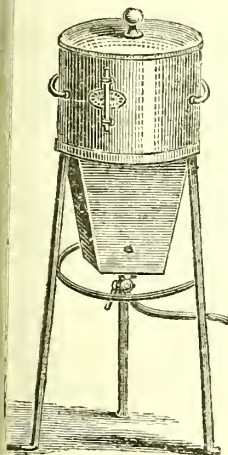
MANUFACTURERS OF

GRANULAR EFFERVESCENT CITRATE OF MAGNESIA

AND ALL OTHER GRANULAR PREPARATIONS.

SAMPLES AND QUOTATIONS FORWARDED ON APPLICATION.

SPECIAL TERMS TO LARGE BUYERS.

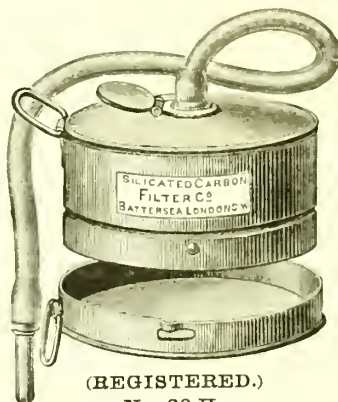


NOVELTY.

SILICATED CARBON POCKET FILTER,

IN GERMAN SILVER, NICKEL-PLATED.
Retailed at FIVE SHILLINGS each.

Designed by
MAJOR FRASER,
 of the
ROYAL ENGINEERS,
 especially
 for Officers' Kits.
 Weighs only 8 ounces.



(REGISTERED.)
 No. 20 H.

It has been approved
 by the
 Authorities at the
 Horse Guards, and has
 been largely
 used in the Afghan and
 Zulu Expeditions.

Sample sent free by Post on receipt of **FOUR SHILLINGS.**

DOMESTIC

Made in cream-coloured Stone-ware, fitted with the Silicated Carbon Media, complete with Cover and Silver-plated Tap.

All sizes of this pattern can now be had with Ice Compartment, which renders this Filter the most perfect of Refrigerators.



FILTER, NO. 27.

PRICES.

				With Ice Compartment.
No. O,	capacity $\frac{1}{2}$ gallon	10s.	6d.	
No. A,	" 1 "	14s.	6d.	... 17s. 6d.
No. B,	" 2 "	21s.	0d.	... 25s. 0d.
No. C,	" 4 "	32s.	0d.	... 36s. 0d.
No. D,	" 6 "	42s.	0d.	... 48s. 0d.
No. E,	" 8 "	52s.	0d.	... 60s. 0d.
No. F,	" 12 "	70s.	0d.	... 80s. 0d.

MAIN SUPPLY FILTER, NO. 40.

SPECIALLY ADAPTED FOR
Mansions, Schools, Hospitals, Public
Institutions, Breweries, Distilleries,
Soda Water Manufactories,
Dye Works,

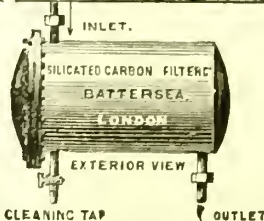
And all other Establishments where large quantities of

PURE WATER

Are required.

The ordinary Sizes kept in Stock are as follows:—

A, $\frac{1}{2}$ -inch or $\frac{3}{4}$ -inch pipe	£6 6s.
B 1-inch pipe	£9 9s.
C, $1\frac{1}{2}$ -inch, 1 $\frac{1}{2}$ -inch pipe	£16 15s.
D, 2-inch pipe	£26 6s.



This Filter is extremely simple in construction, and can be either connected with a Cistern or attached to the Main Service Pipe. It requires no attention beyond an occasional opening of the Cleansing Tap, and will deliver a supply of purified water at a rate of 50 to 1,000 gallons per hour, according to size.

Special Contracts entered into
for Large Works, Institutions,
&c., &c.,

FOR PURIFYING THE WHOLE OF THE WATER SUPPLY OF A BUILDING BEFORE USE.
Ensuring Rapid and Perfect Filtration, at either High or Low Pressure.

SILICATED CARBON FILTER CO., CHURCH ROAD, BATTERSEA, LONDON.

SILICATED CARBON FILTERS.

SYPHON FILTERS FOR TRAVELLERS.

By means of these filters pure and perfectly wholesome water may be drunk from any pond or stream by simply immersing the filter therein and drawing the water through the tube by suction.



No. 20.

used as a Syphon by placing it in a vessel of water, then drawing the water by the mouth, and allowing the flexible tube to hang over the side below the Filter. When once set in operation their action is continuous.

They are readily cleaned from sedimentary matter by merely blowing through the tube, and brushing the surface of the filtering medium.

- Pocket Filter, 2½ inches diameter, in porcelain, with glass mouthpiece, in decorated metal box 2 6
- Ditto, 3½ inches diameter, in best stoneware 5 0
- Ditto, " " with silver-plated tap 7 0
- Emigrant's, 5 inches diameter, with silver-plated tap 12 0
- Pocket Filter, for carrying over shoulder, as supplied to the Forces in Abyssinia and in Zululand, and to the Ashantee Expedition 3 6
- Ditto, nickel-plated, designed by Major Fraser, R.E., and specially recommended by the Horse Guards for Officers' kits 5 0

TABLE FILTER, NO. 24.

Made of stout glass, in 1, 2, and 3 pint sizes, the filtering medium being securely fitted into the bell-funnel, so that it is not liable to become loose, or to allow unfiltered water



to pass. This Filter is peculiarly suited for the Bedroom and for Table use, affording a ready and simple means of obtaining at any time freshly-purified water.

PRICES.

O, 2s. 6d.; A, 4s.; B, 5s. 6d.
Engraved Vine Pattern—O, 3s. 6d.; A, 5s. 6d.; B, 7s. 6d.

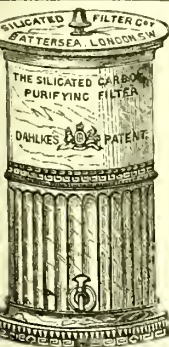
POROUS TERRA COTTA FILTER, NO. 29

Shape of this Filter as Fig. No. 24.

O, 2s. 6d.; A, 4s.; B, 5s. 6d.

SILICATED CARBON BLOCKS.

2 in., 1s. 6d.; 2½ in., 2s. 6d.; 2¾ in., 3s.; 3½ in., 4s.; 4¾ in., 5s. 6d. ea.
SPECIAL QUOTATIONS FOR QUANTITIES.



DINING-ROOM FILTER, No. 22.

MADE IN MARBLED CHINA.

Size A holds about two gallons; size B, five gallons.

PRICES.

- A 35s.
- B 80s.
- A, with Ice Compartment.. .. . 42s.
(New Patent.)
- B, with Ice Compartment.. .. . 100s.
(New Patent.)

The large size (B) is specially adapted for Hotels, Refreshment Rooms, Luncheon Bars, &c.

REFRIGERATOR FILTER, NO. 25.

Made in Porous Terra-Cotta Ware,

Which acts with remarkable power as a cooler, and renders this Filter invaluable, especially in Tropical Climates,

AFFORDING A

COOL DRAUGHT OF PURE WATER.

- Price, with Silver-plated Tap 31s. 6d.
- Ditto, ditto, with Ice Compartment.. .. . 42s. 0d.

Capacity Two Gallons.

Specially adapted for Tropical Climates.



SILICATED CARBON (Regd.) ASCENSION FILTERS.

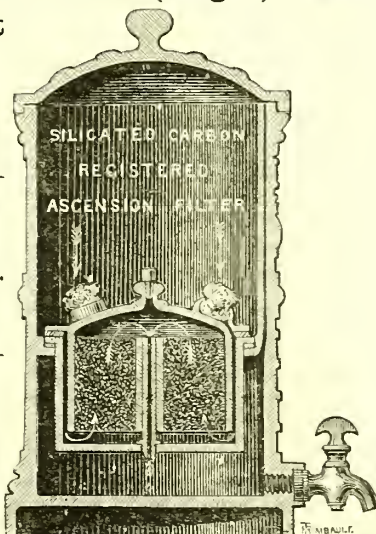
The most efficient known Filter

PRICES:

No. 38.

- 1 Pint, 2/6 ea.
- 2 " 4/-
- 3 " 5/6

The Water passes upwards through the Silicated Carbon in the direction shown by the Arrows in the Drawings.



No. 37.

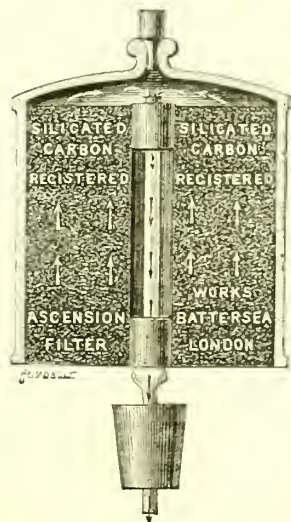
for Table and Domestic Use.

PRICES:

No. 37.

- 1 Gal., 18/- ea.
- 2 " 26/-
- 4 " 38/-

The inner blocks being movable, by attaching an india-rubber tube they can be converted into Pocket or Travelling Filters.



SECTION OF NO. 38.

WRITE FOR FULL LISTS TO THE

SILICATED CARBON FILTER CO., CHURCH ROAD, BATTERSEA, LONDON.

EAU DE COLOGNE

OF THE MOST ANCIENT DISTILLER,

JOHANN MARIA FARINA,

Opposite the Julichs Place, COLOGNE.

ESTABLISHED A.D. 1709.

PRIZE MEDALS:—LONDON, 1851 AND 1862; OPORTO, 1865; PARIS, 1867; VIENNA, 1873.

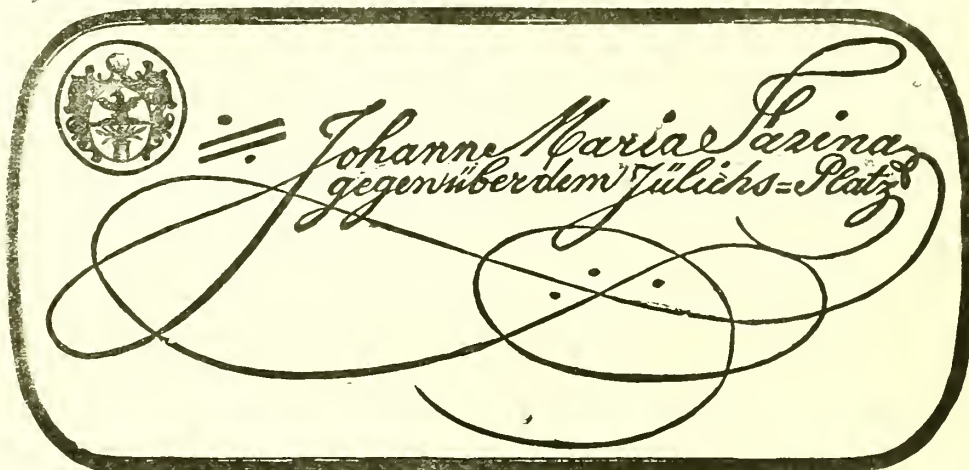
By appointment, Sole Purveyor to Her Most Gracious Majesty Victoria, Queen of Great Britain & Ireland; Their Royal Highnesses the Prince and Princess of Wales; William, King of Prussia;



Albert II., King of Saxony; Alexander II., Emperor of Russia; Francis Joseph, Emperor of Austria; Lewis, King of Portugal; H.R.H. Frederick William, Crown Prince of Prussia.

In consequence of increasing inquiries from the Colonies for my Eau de Cologne, the only genuine, I beg to submit my Price Current.

At the same time I beg to call special attention to the following facsimile of my Trade Mark, for the protection of which I have instituted thirteen suits in the High Court of Chancery, all of which have been decided in my favour.



All similar Labels being more or less imitations of the same, I shall proceed as before against all persons selling or exposing for sale any such imitations.

I only prepare one quality of Eau de Cologne. This quality never varies in the slightest degree, and there has not been the smallest change in the manufacture since the year 1709, when it was invented by my ancestor.

Orders equal to at least 12 dozen short bottles will be promptly executed at 12s. 6d. per dozen, against my bill drawn at three months from the date of invoice, delivered free on board the export ship, at Rotterdam, Antwerp, Hamburg, or Bremen, no charge being made for the case and packing, but insurance charged extra. 7½ per cent. discount is allowed for orders equal to at least 100 dozen, but on no smaller quantities.

I may add that, as I do not draw on the Colonies, all Orders must be accompanied by a credit on some London House, or permission to draw on same at three months.

The Goods can also be shipped in transit through London at a very small additional expense, full particulars of which may be obtained of my Sole Agents for Great Britain and Ireland:—

MESSRS. J. & R. McCracken,

No. 38 Queen Street, Cannon Street, London, E.O.

The following are the sizes of my bottles:—

No. 1. Long Green Flasks	12 bottles	} to one dozen.
" 2. Short White Bottles	...	...	...	...	...	...	12 "
" 3. Double ditto	...	...	...	...	...	...	6 "
" 4. Wickered Bottles (small)	...	...	...	...	...	...	8 "
" 5. ditto (medium)	...	...	...	...	...	...	4 "
" 6. ditto (large)	...	...	...	...	...	...	2 "

JOHANN MARIA FARINA,

OPPOSITE THE JÜLICH'S PLACE.

COLOGNE: January, 1882.

PEMMICAN, OR AUSTRALIAN DESICCATED BEEF.

This Pemmican, which has been specially prepared by Dr. BANCROFT, of Brisbane, Queensland, has proved most beneficial for CHILDREN and INVALIDS, in the form of either Beef or Soups. It is invaluable to Travellers, as it can be eaten simply on bread with salt. Dr. Bancroft has by his process compressed 4 lbs. of fresh Beef into 1 lb. of Pemmican, which will keep for any length of time.

Dr. W. HOBBS, Visiting Surgeon of the Brisbane Hospital, says: "My experience during the four months it has been used in the department under my charge has convinced me that its use has been economical to the institution, and also satisfactory to the inmates."
Dr. C. D'OYLY H. ALPIN, Government Geologist for South Queensland, writes: "And the fact of its being dry, concentrated, and not the least liable to spoil, renders it particularly adapted for travellers."

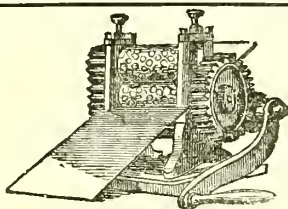
Price per lb., 3s.; or per 5 lb. Tin, 14s.
THE TRADE SUPPLIED.

THOS. CHRISTY & CO.,
155 FENCHURCH STREET, LONDON, E.C.

ESTABLISHED



1885.



ESTABLISHED



1885.

THE ONLY PRIZE for Confectioners' Machines at the International Exhibition of 1862; Paris, 1867; Lima, Peru, 1872; London, 1873; and Philadelphia, 1876, was awarded to

L. COLLIER,
WELLINGTON WORKS, River Street, ROCHDALE,
MANUFACTURER OF ALL KINDS OF
MACHINES FOR CONFECTIONERS AND BISCUIT BAKERS.
An Illustrated Catalogue sent free on application.

BOURNE WATER.

THE PUREST IN ENGLAND.

R. M. MILLS & CO.,
BOURNE, LINCOLNSHIRE,

Manufacture all kinds of Aerated Waters from this celebrated Artesian Spring.

Dr. ANDERSON'S Tissue Phosphate Tonic Water, an Aerated Tonic Beverage containing all the Mineral Elements of Nutrition (no Iron), and assisting Digestion in a most marvellous degree.

SOLD BY THEIR AGENTS THROUGHOUT ENGLAND. PRICE, WITH DESCRIPTIVE PAMPHLETS, UPON APPLICATION.

SPECIAL AGENTS IN LONDON—

Messrs. INGRAM & ROYLE, Victoria Street, and
Messrs. HARDY & Co., 42 Fenchurch Street.

HAMBRO SPECKLED.



TRADE MARK
REGISTERED.
All Orders by Post receive immediate attention.

LEECHES!

Warranted Healthy, Wholesale and for Exportation, Direct from Marshes.

FITCH & NOTTINGHAM,
Leech Breeders,

MARSEILLES, & 55 PENTONVILLE
ROAD, LONDON, N.

INDEX TO ADVERTISEMENTS,
SEE PAGES 21, 22

MOUNSEY'S ORIGINAL PRESTON SMELLING SALTS.

PREPARED ONLY BY HIS SUCCESSOR,

WILLIAM WILLAN,
CHEMIST,

AT THE OLD ESTABLISHMENT

3 FRIARGATE, PRESTON.

Liberal Terms to Shippers and Large Buyers. Usual Trade Discount.

The Trade should see that the name of "Mounsey" is on the bottles, and "W. Willan, late Mounsey, Chemist, Preston," on the seal which is upon every cork.



W. H. BAILEY & SON,

38 (late 16) OXFORD ST., LONDON,
Six Doors from Hanway Street.
ESTABLISHED A.D. 1833.



FIRST PRIZE (SILVER MEDAL) FOR TRUSSES AWARDED BY THE
WORSHIPFUL COMPANY OF CUTLERS OF THE CITY OF LONDON, MAY, 1879.

FIG. 1.

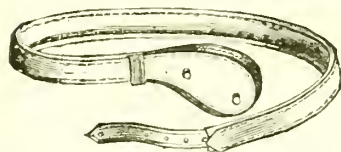


FIG. 4.

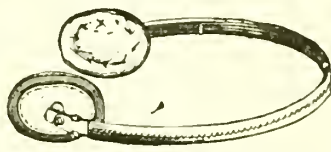
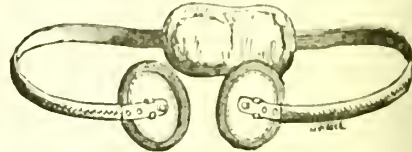


FIG. 5.



TRUSSES.

Circular Trusses, single, as Fig. 1, basil and chamois or basil and moleskin	per doz.	£1 1 0
Circular Trusses, double, basil and chamois or basil and moleskin	per doz.	1 14 0
Salmon & Ody's Expired Patent, single, Fig. 4	"	2 14 0
Salmon & Ody's Expired Patent, double, Fig. 5	"	1 10 0
Moe-Main Lever, single	each	3 0 0
Moe-Main Lever, double	"	0 8 0
Cole's Expired Patent, single	"	0 13 6
Cole's Expired Patent, double	"	0 6 0
Serotal Trusses, basil and chamois or moleskin, single	"	0 12 0
" " " " " " double	"	0 4 0
" " " " " " double	"	0 7 0

SUSPENSORY BANDAGES.

No. 1. Cotton Bags and tape under-straps	per doz.	0 8 0
2. Cotton Oxonian, with drawing-strings	"	0 10 0
3. Silk Bags and tape under-straps	"	1 1 0
4. Silk Oxonian, with drawing-strings	"	0 18 0
5. " " Bags bound with elastic	"	1 4 0

SUSPENSORY BANDAGES—continued.

No. 6. Silk Oxonian, superior quality, bands of buff jean, with drawing-strings	per doz.	£1 4 0
7. Silk Bags, to button on, with tape under-straps	"	1 1 0
8. " " " " under-straps to button	"	1 4 0

ELASTIC STOCKINGS, KNEE-CAPS, ETC.

Manufactured expressly for Export, and warranted to stand a hot climate better than any others in the Market.

	Silk.	Super. Silk.	Cotton.	Super. Cotton.
Stockings per pair	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Knee-caps	0 9 6	0 14 2	0 5 6	0 6 10
Calf-pieces	0 6 6	0 10 0	0 3 8	0 5 3
Socks	0 7 0	0 9 6	0 4 4	0 5 9
Wristbands	0 5 6	0 8 0	0 3 6	0 4 9
Knee Stockings	0 2 2	—	0 1 6	0 2 1
Belts, to draw on each	0 16 0	1 4 2	0 9 2	0 12 1
	0 16 6	—	—	0 12 0

The above may be obtained direct from the Manufacturers, or from their Wholesale and Export Agents
Messrs. Barclay & Sons, 95 Farringdon Street.

COLTHURST & HARDING,

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New Improvements.

REPORTS UPON NEW APPLIANCES.

Lancet report:—"BURROUGHS' AMMONIA INHALER.—A very useful apparatus for inhaling the vapour of chloride of ammonium. In inhalation air is drawn into a chamber containing hydrochloric acid through an inlet plugged with cotton-wool saturated with ammonia, and the vapour is then drawn on into a second chamber containing water, and there washed. By this means the vapour inhaled is always kept of a neutral reaction. If desired, other medicaments can be combined with the sal ammoniac vapours by adding them to the water. It is a very efficient apparatus."

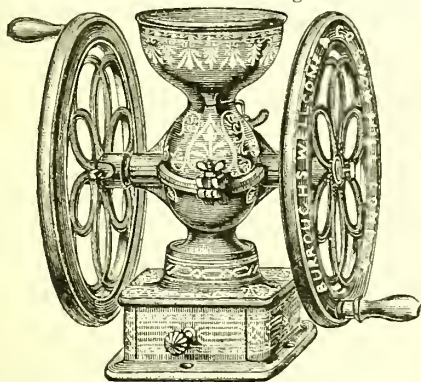


The *Medical Press and Circular* reports:—"The Burroughs' Inhaler is an ingenious and convenient device for inhaling chloride of ammonia fumes; by its use the chloride of ammonium is brought in more intimate contact with the mucous surfaces of the passages of the nose and throat than by any other form of inhaler."

A NEW DRUG MILL.

The American Enterprise Drug Mill constructed upon an improved principle. This new Mill is intended to displace the tedious operation of the mortar and pestle; it works rapidly, efficiently, and economically. It is certainly the most perfect machine for grinding drugs that has yet been invented, both as regards simplicity of parts and efficiency in working.

In fig. 1 we see the Mill closed, while in fig. 2 the upper part forming the hopper is thrown back, and the cutters and fly-wheels lifted out of their bearings. A great improvement has been effected in this Mill. The grinders or cutters are



now cut to a much keener edge than before, thus insuring a closer contact, and reducing any drug or pulverizable substance when it is necessary to an almost impalpable powder. The general construction has also been improved, rendering it easier to work.

This Mill can be regulated to grind to any degree of fineness or coarseness required, and by the mere turning of a thumb-screw can be opened, and the cutters removed in a minute. The form of the cutters is designed so as to crush and reduce to powder almost any substance effectually and quickly, at the same time that the cutting edge is never destroyed, thus saving the expense of re-cutting incident to the ordinary mill. The cutters always keep their edge, and never require re-toothing; if broken, they can be replaced at a trifling cost.

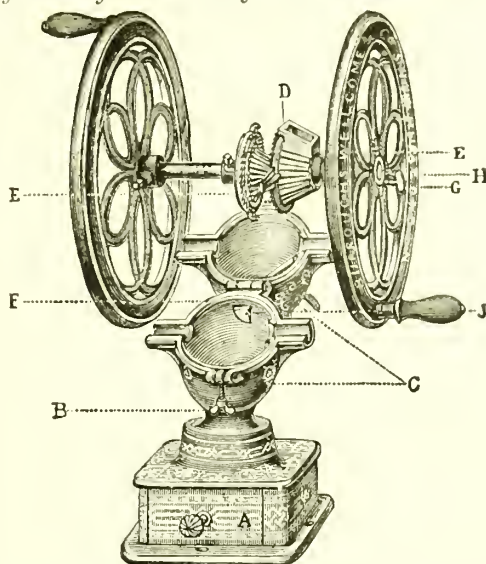
In this Mill ALONE there is no danger or loss resulting from grinding any number of different substances in succession, because between each operation the Mill can be opened, the cutters taken out, cleaned, and replaced with the greatest ease.

Professor MAISCH, Philadelphia Coll. Pharmacy, U.S.A., says:—"The best Mill that has been devised. One of the

prominent advantages is the facility with which the internal working parts can be viewed by simply turning one screw."

Report from an eminent American firm:—

The most perfect and complete thing of its kind we have ever seen. We have tried almost all the Mills to be found in the market. Your Mill works to our entire satisfaction, and we think will supply a want long felt by many Chemists and Druggists throughout the country.



The great advantages this Mill possesses over all other Mills that we have seen or tried are:—

1st. That it grinds fast and well, without requiring any more powder than other Mills of its kind.

2nd. The whole interior can be exposed to view "in a few seconds" by turning a single screw and lifting the hopper, which works on a hinge, thus enabling the operator to examine the grinding plates when necessary.

3rd. When the Mill needs cleaning, it can be taken entirely apart "in less than a minute" by turning one screw, lifting the hopper over on its hinge, then taking out the shaft to which are attached the cutters, and you have them in a most convenient position to be cleaned.

4th. Having two wheels, the shaft is properly balanced, and the grinding surfaces are therefore running true with each other all the time.

5th. Its moderate cost.

Hoping you will make it generally known to the trade that such a Mill can be had, we are sure you can dispose of many of them.

Yours respectfully,

H. C. BLAIR & SONS, Apothecaries, Philadelphia.

The prices are as follows:—Three sizes (Ornamented), £2 10s., £3 10s., £5 10s.; (Plain), £2, £3, £5. Subject to the usual discount.

The Sole European Agents are BURROUGHS, WELLCOME & Co., Snow Hill, London.

NOTE.—The price for the Enterprise Tincture Press has been reduced to 15s, subject to the usual discount.

THE REMINGTON PHARMACEUTICAL STILL.

Invented by Professor REMINGTON, of the Philadelphia College of Pharmacy; being an improvement over any previous device, by its greatly increased condensing power and rapidity of action, together with its simplicity, and adaptability for general laboratory operations. Capacity, from three gallons upwards. The condenser is so constructed as to greatly increase its power of condensation; seven parallel straight tubes, each eleven inches in length, surrounded by a copper case, which permits of the circulation of cold water between; the combined length is thus over six feet, and represents over one hundred square inches of condensing surface; these straight tubes are easily cleaned. The still is in every respect simple, and convenient for ready adjustment.

Price, in Copper Tinned, £7; Nickel-plated, £9; subject to the usual discount.

LAXATIVE SENNA SYRUP,

AN IMPROVED SWEET ESSENCE OF SENNA,

ESPECIALLY ADAPTED FOR LADIES AND CHILDREN.

This preparation contains no medicine other than Senna, which has been deprived of its griping effect, and also of the disagreeable odour and taste peculiar to it.
The Syrup is flavoured, and is readily taken by Children. It does not deposit, ferment, or spoil by being kept, and in this and other respects is much superior to the preparations of Senna made by the usual processes.
DOSE.—For Children, one tea-spoonful; for Adults, two tea-spoonfuls. Price 2s. per lb. Labels suitable for retail, in two colours, WITHOUT NAME AND ADDRESS, 1s. per 100.

PREPARED MALT FOOD,

FOR INFANTS AND INVALIDS.

In Tins holding about 7 oz., each, to retail at 6d. each, price 4s. per dozen; in Tins holding about 1 lb. each, to retail at 1s. each, price 7s. 6d. per dozen, less 10 per cent. three months, WITHOUT NAME AND ADDRESS.

SOUTHALL BROS. & BARCLAY, Manufacturing Pharmacutists, BIRMINGHAM.

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THE NEW BLACK INK, different from anything else ever produced.

Writing becomes a pleasure when this Ink is used. It has been adopted by the principal Banks, Public Offices, and Railway Companies throughout Ireland.

It writes almost instantly full black.
Does not corrode Steel Pens.
Dries rapidly on the Paper.
Is cleanly to use, and not liable to blot.

Flows easily from the Pen.

Blotting-paper may be applied at the moment of writing.

In Jars, 6d., 1s., and 2s. each.

Can be obtained, in London, through Messrs. BARCLAY and SONS, Farringdon Street; W. EDWARDS & SON, 157 Queen Victoria Street, London, E.C.; F. NEWBERRY and SON, Newgate Street; S. MAW, SON, and THOMPSON, Aldersgate Street; JONES and CO., 98 Southwark Street; HARVEY, SHEPHERD & CO., Charterhouse Square, London; WM. MATHER, Manchester; AYRTON and SAUNDERS, Duke Street, Liverpool; and GOODALL, BACKHOUSE & CO., Leeds.

BEWLEY & DRAPER, Limited, DUBLIN.

See "CHEMIST AND DRUGGIST," December 15th, 1874.

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MEDICATED GELATINE.

A portable, elegant, and efficient vehicle for the Administration and Use of Important Medicines. Specially adapted to the requirements of Medical Practitioners in the Country and the Colonies.

The universal and increasing demand for this novel and effectual method of carrying, in the smallest possible compass, a supply of the most important medicaments to be found in the surgery has induced Messrs. SAVORY & MOORE to effect a

REDUCTION IN THE PRICE OF GELATINE LAMELS FOR INTERNAL USE,

which are now sold in Sheets of *Twenty-four Lamels each* at 1s. 3d. per Sheet, Quinine and Emetia Lamels excepted.

Suspended in a little water, the Lamels are readily taken, and without the slightest taste.

A POCKET LETTER CASE will contain an ample supply (several hundred doses) of the Lamels of the most varied character and description.

DISCS FOR HYPODERMIC INJECTIONS.

Consist of small discs (SQUARE) impregnated with a definite proportion of alkaloids, &c.

Issued in Tubes of 25 Discs, price 2s. 6d.

N.B.—Samples of Lamels, and a List of the whole series of Medicated Gelatine Preparations, post free on application.

DISCS FOR OPHTHALMIC USE.

Comprise minute (ROUND) discs impregnated with a definite proportion of alkaloids, &c.

Issued in Tubes of 100 Discs, price 2s. 6d.

BLISTERING GELATINE, OR LAMELLE CANTHARIDIS.

The most elegant, efficacious, and convenient mode of Blistering.

Tins, 1s. 3d.

THE BEST FOOD FOR INFANTS.

USED IN THE ROYAL NURSERIES.

The ONLY FOOD specially prepared FOR INFANTS.

THE MOST PERFECT SUBSTITUTE FOR HEALTHY MOTHER'S MILK.

A combination, the result of the latest physiological improvements upon Liebig's original formula. The granules of the Farina are thoroughly broken and cooked and always ready for conversion into food. It is also associated with *Fresh Malt Diastase* of known digestive activity, and other valuable nutrients in due proportions. This food is therefore really "self-digesting" in the infantile stomach and conveys nourishment for every part of the human frame.

Tins, 1s., 2s., 5s., and 10s.

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The regulations for registration under the Veterinary Surgeons Act are now published. Forms must be filled up and sworn to, declaring that the applicant has been engaged in veterinary practice for five years before the passing of the Act, and containing a certificate of character. If these are returned *before April 1* the fee for registration as an existing practitioner is 3*l.* 3*s.* After that date the fee will be 6*l.* 6*s.* for a little while longer. Fuller particulars are given among our Editorial Notes.

Mr. Warton, M.P. for Bridport, proposes to call the attention of the House of Commons to the sale of patent medicines. We give a summary of his ideas on page 127. His notice was among the orders on Monday evening last "on going into Committee of Supply," but he let his opportunity slip, and was supplanted by Mr. Redmond with an Irish grievance, which it was found necessary to support by a dozen Irish speeches. The patent medicine debate was consequently indefinitely postponed, but Mr. Warton assures us that he will not abandon his intention.

The Chemists and Druggists' Trade Association have prosecuted the unqualified manager of a branch shop at Carmarthen who had sold oxalic acid on behalf of the real owner of the business, Mr. W. E. Jones, who usually resides in London. The decision of the magistrates, based on the judgment of

Mr. Justice Grove in the case of "Templeman v. Trafford," was to the effect that the manager, who occupied the house, was legally the "seller" of the poison, and ought to have attached his own name to the label. In that case, of course, he would have been liable to prosecution under the 15th section of the Pharmacy Act.

The Irish Pharmaceutical Council are taking active measures to improve their Act. They desire to abandon entirely their power to create a class of chemists and druggists, and they wish to expunge from the Act all reference to this second class. They propose, however, to register certain persons without examination, to be called "registered druggists," who are to be permitted to sell poisons. They propose to add to their poison schedule the additions recently suggested by the British Pharmaceutical Council, as well as nux vomica and its preparations and oil of rue to Part 2. They have also agreed to propose a third part of the schedule to include certain articles, such as carbolic acid and the poisonous chloride solutions, which are to be sold only in specially-shaped bottles.

Regulations for the sale of poisons have been put in force for one year provisionally in the Island of Guernsey, and will be made permanent if they are found to work well. In most respects they are similar to the English regulations, but more poisons are included in the first part of the schedule, and it is required that all these shall be kept under lock and key. A new law in Guernsey provides that it shall be necessary for chemists who in future wish to "practise" in the island to possess either a certificate of the English Society or a first or second class diploma as a French pharmacien.

Our Australian Correspondent states that Victoria at the present time offers an excellent opening to steady, competent chemists' assistants who have passed their examinations at home. There is a great scarcity of chemists' assistants in the Colony.

A grocer at Airdrie supplied a labourer with saltpetre instead of with Epsom salts as wanted, and the labourer having taken the saltpetre was nearly killed in consequence; but the Sheriff did not think the injury resulting called for damages.

We report a case in the Shoreditch County Court, which will show retail chemists their rights in regard to returning goods supplied which are not satisfactory.

The English Branch Council of the General Medical Council has given its consent to Mr. Lionel Davis, of 140 Edgware Road, registered dentist, to institute proceedings against Mr. Charles Smith, of 91 Praed Street, Paddington, and Mr. C. Valleek, of 106 Edgware Road, for describing themselves as surgeons and dentists, and practising in that capacity, their names not being registered in the Dentists' Register. This will be the first prosecution under the Dentists' Act.

The Presidents of the Chemical Society, of the Society of Chemical Industry, and of the Institute of Chemistry have issued cards of invitation to the members of those societies to a *conversazione* at the Crystal Palace on the 22nd inst., when an opportunity of inspecting the electric light exhibits will be afforded.

The International Medical and Sanitary Exhibition of last year realised a net profit of a little over 1,000*l.*, which has been handed over to the Parkes Museum.

At the Chemical Society Mr. Flight has shown that air may be completely deprived of its oxygen by ferrous oxide freshly precipitated from ferrous sulphate solution by caustic potash.

CORNER FOR STUDENTS.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

QUALITATIVE ANALYSIS.

THE subject of the next exercise will be a mixture of salts. The mixture is to be submitted to a thorough systematic examination designed to detect all its constituents and to demonstrate the absence of other substances. Students are required to send a complete report of the analysis. A list is to be given of the metals and acid radicles detected, distinguishing those which may be regarded as accidental impurities.

Applications will be received up to March 20, and portions of the mixture of salts will be sent to applicants on the 25th.

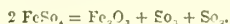
Students' papers will be received up to April 15.

REPORTS.

The mixture of salts distributed for analysis in January last consisted of equal parts of dried ferrous sulphate and anhydrous potassium sulphate. The only impurity present in appreciable quantity was magnesium.

On heating a portion of the substance in a tube closed at one end a little water condensed on the cool parts of the tube, sulphur dioxide was evolved, and a reddish coloured residue remained. The small quantity of water obtained was obviously to be regarded as hygroscopic rather than as chemically combined water, not merely because there was but little separated, but also because there was no appearance of the fusion which often takes place just before water of crystallisation is expelled by heat. The evolution of sulphur dioxide might have been regarded as an indication of the presence of a sulphite. On heating calcium sulphite, for example, this gas would be evolved and lime would remain, but other sulphites, such as those of the alkali metals, are decomposed by heat without the liberation of sulphur in combination with oxygen.

Thiosulphates, sometimes called hyposulphites, undergo a similar decomposition, and some sulphates are split up by heat into sulphur dioxide and an oxide of the metal present. In the case of ferrous sulphate the decomposition effected by heat is as follows:—



This operation is carried out on a large scale in the preparation of the concentrated sulphuric acid known as Nordhausen acid. Ferrons sulphate was originally known as green vitriol, hence the oily-looking liquid obtained in this operation was called oil of vitriol, a name which has since been extended to ordinary sulphuric acid, no matter how obtained. The residue remaining from the distillation of the Nordhausen or fuming sulphuric acid was called by the old chemists *Caput mortuum vitrioli*, or colcothar; as a polishing material, and for other purposes, it is extensively used in the arts.

We have more than once directed the attention of students to the risk of drawing erroneous conclusions from certain blow-pipe experiments, which appear at first sight to be very simple and very easily carried out. Compounds of a number of the heavy metals are reduced to the metallic state when heated with carbon; some of these metals are volatilised at the temperature at which the change takes place. In the cooler parts of the blowpipe flame the metallic vapour, in the act of condensation, meets with the oxygen of the air and is reoxidised. The oxide thus produced constitutes the incrustation observed around compounds of this nature when heated on charcoal. It is not always necessary that a reduction to the metallic state should take place, for some oxides are volatilised without previous decomposition,

and the same effect is produced. The oxides formed in this way are nearly all light coloured; most of them are white. Cadmium yields a brown incrustation; bismuth and lead, yellow; zinc, tin, arsenic, and antimony yield white incrustations, the two former being yellowish while hot. Now the charcoal usually employed in such operations is by no means pure carbon; it generally yields on ignition a considerable quantity of ash. It is quite a common thing for the student to mistake this ash for a sublimate or incrustation produced by some of the metals to which we have referred. As a rule it is almost sufficient to be aware of the danger in order to avoid wrong conclusions, for the appearance presented by the ash is quite distinct from that of the incrustations of metallic oxides. The student who has derived his information solely from a book, and who has not actually made the experiments himself, is not in a position to form an opinion of any value on the reactions observed in the examination of a substance of unknown composition. Nothing can be easier than the experimental study of reactions of analytical interest, and, though it might appear troublesome at first, it will be found the easiest method eventually. One very important power must remain quite undeveloped unless the student takes the trouble to verify the statements in his text-book, and that is experimental skill, the power of asking Nature questions, and of deciphering her answers.

PRIZES.

The First Prize for the best analysis has been awarded to W. STEWART, 7 Corn Market, Belfast.

The Second Prize has been awarded to JOHN LAURIE, 22 Foxhall Road, Blackpool.

Marks Awarded for Analysis.

W. Stewart (first prize)	95
Johu Laurie (second prize)	93
J. F. Croshaw	90
Prospect	88
S. Lawrence	85
Carduus	85
Tycho Brahé	80
W. Cyril Birks	80
Quanto difficilior tanto præclarior	75

TO CORRESPONDENTS.

Prizes.—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as second prize.

* All communications should include the names and addresses of the writers.

P. prospect.—The statement that the substance volatilised when fused on charcoal is not consistent with your conclusion as to its composition. In reality, part fused and sank into the charcoal, and part was decomposed, leaving a residue of ferric oxide.

S. Lawrence.—Your analysis was not sufficiently complete; other metals might have been present, and would certainly have escaped detection by the system of tests which you describe. In short you did not prove that iron and potassium were the only metals in the mixture.

Carduus.—The slight incrustation observed was, no doubt, attributable to the cause mentioned above.

Tycho Brahé.—You do not give any evidence of the presence of the large quantity of water which you include in the composition of the mixture.

W. C. Birks.—The precipitate produced by sulphuretted hydrogen consisted of sulphur, but unless thoroughly washed some of the iron salt present in such large quantity would adhere to it, and leave a slight residue on ignition. The very careful arrangement of your results makes it a pleasure to read your report.

Quanto.—The remainder of your *nom de plume* to be continued in our next number for want of space. The production of sulphurous anhydride is explained above. The colour imparted to the Bunsen flame by potassium compound is a mixture of red and violet. The spectrum shows two lines, one in the scarcely-visible violet region, the other in the red. Another source of red rays might be present without being detected by the unaided eye, provided the quantity was insufficient to obscure the potassium colouration.

The Pharmaceutical Council.

MARCH 1.

THE Council of the Pharmaceutical Society held its monthly meeting at the offices. Mr. Thomas Greenish, the President, occupied the chair, and the whole of the members were present.

The minutes of the last meeting were read and confirmed.

THE PRELIMINARY EXAMINATION.

Mr. BORLAND, in alluding to the large proportion of failures at the recent preliminary examination, wished to know whether the questions in arithmetic were more difficult than usual. Although the Council did not take any active part in the examination, it would be advisable to enquire into the subject from time to time.

Mr. ATKINS expressed an opinion that arithmetic was the weak point in the University local examinations, and this was more noticeable among girls.

The PRESIDENT was of opinion that the tendency on the part of most examining bodies was to raise the standard.

Mr. YOUNG thought it might be advisable to appoint a committee to watch the examination papers, with the view of checking the advance referred to.

The VICE-PRESIDENT said that if any supervision was to be attempted it should be the act of the Council, and he did not see how they could very well interfere. He did not think the number of failures was sufficient to justify them in doing so.

Mr. WILLIAMS was quite sure that it was not the wish of the Council to make the Preliminary Examination so stringent as to prevent men, otherwise qualified, from becoming chemists.

Mr. SYMES believed that the general feeling was that these examinations were too simple, and that if they were made more stringent many would be prevented from failing afterwards.

After some further discussion the subject dropped.

THE INTERNATIONAL MEDICAL CONGRESS.

The PRESIDENT produced a copy of a bronze medal struck in commemoration of the International Medical Congress, which had been sent to the Pharmaceutical Society by Sir William McCormick, on behalf of the Congress.

It was resolved, on the motion of the PRESIDENT, seconded by the VICE-PRESIDENT, that the Secretary should be instructed to convey to the Secretary of the International Medical Congress the thanks of the Pharmaceutical Society for this gift.

The PRESIDENT said the Library and Museum Committee had very much desired to obtain four copies of the proceedings of the Medical Congress, and he had accordingly made personal application to the Secretary with the view of obtaining the same. He had, however, received a reply stating that the cost would be two guineas, and that Sir William McCormick himself could not obtain one except by payment, as there were no copies for free distribution. He regretted that they could not therefore obtain what they required.

At a later period of the meeting, however, the PRESIDENT announced that Mr. R. Bremridge, the Assistant-Secretary, had received a communication, from which it appeared that he would by-and-by be able to obtain a copy of the proceedings of the Congress.

FINANCE.

The Council then went into committee to consider the report of the Finance Committee.

BENEVOLENCE.

On the recommendation of the Benevolent Fund Committee grants were made as follows:—10*l.* each to the widows of former members, unsuccessful at the last election; 10*l.* to a widow of a registered chemist and druggist; 10*l.* to a chemist and druggist, aged 70; and 20*l.* to the Secretary for the Casual Fund. They also reported that three cases which came before them were not entertained.

A donation of 10*l.* 10*s.* was received from Mr. William Squire, making together, with previous donations, 20 guineas; and one of 10*l.* 10*s.* from Mr. A. Bird, making, with previous amounts, 25 guineas.

Both these names were ordered to be added to the list of donors exhibited in the hall.

The SECRETARY read a letter addressed to himself by Mrs. Sarah Lloyd and Mr. A. L. Lloyd, executors of the late Mr. Lloyd. The writers presented their compliments to the Council, and enclosed a cheque for 100*l.*—a legacy left by the late Mr. Lloyd to the Benevolent Fund of the Pharmaceutical Society.

The SECRETARY was requested to place Mr. Lloyd's name on the board in the entrance hall, on which are recorded the various legacies which have been bequeathed to the Benevolent Fund.

The SECRETARY stated that he had that day received a contribution of 15*l.* 15*s.* from the Committee of the Junior Pharmacy Ball. He added that some of the local secretaries had begun to make a personal canvass for subscriptions on behalf of the Benevolent Fund, with good results. He hoped that the suggestion of the Council would be acted upon generally, as he felt sure that it would be of great service to the fund.

The PRESIDENT read a list of subscriptions to the fund. He said he was glad that the accounts of the local secretaries to hand showed a satisfactory increase, as compared with last year. In one case the number had increased from 10 to 20.

Mr. SAVAGE said he had gone round with the local secretary of his district, and had obtained 10 new subscribers.

Dr. SYMES said that, in endeavouring to get subscriptions, one heard many suggestions from different persons, and he had found that there was a very general opinion that the fund was prejudiced by the fact that the subscriptions and donations were not published in the Journal. Some years ago they were so published, and it was thought that this practice should be resumed, not so much for the sake of advertising those gentlemen who subscribed as for the purpose of indirectly calling attention to those who did not do so, the result of which would be to bring a large increase to the fund. He promised to mention this to the Council, so that unless there was some valid reason against it, the old practice might be resumed. It was true that the amounts were published in the Calendar, but very few persons ever saw that.

Mr. HAMPSON said he had exactly the same idea in his head, and he was, therefore, glad to support the suggestion which had been made by the previous speaker. There might, of course, be something to be said on the other side, but he felt sure that a great advantage would be derived by publishing the subscriptions in the Journal.

Mr. YOUNG sympathised with the views which had been expressed, though he did not know how far it would be practicable to publish the names in cases where the subscriptions were very small. Perhaps in those cases they might publish the names of the towns, omitting those of the specific subscribers.

Mr. ROBBINS said he remembered that the names used to be published in the Journal, but he had no recollection of this custom having been altered by a resolution of the Council.

The PRESIDENT thought that there was much to be said on the other side of the question. He suggested, therefore, that it should be referred to the Benevolent Fund Committee for consideration.

Mr. RICHARDSON endorsed this view of the matter. As there were objections to printing a list in each number of the Journal, he suggested that a list of the year's subscriptions might be inserted in a special annual number. No one got the Calendar unless they purchased it, and very few chemists and druggists did so.

The President's suggestion was then adopted.

CINCHONA BARK.

The Council then considered in committee the report of the Library, Museum, and Laboratories Committee.

On the open Council being resumed,

The PRESIDENT said they had heard from the Committee's report that the Secretary had been requested to apply to the

Under-Secretary of State for India for specimens of cinchona bark. They had received a very satisfactory reply from the Colonial Office, which he asked the Secretary to read.

The SECRETARY then laid the letter before the Council. It stated that Earl Kimberley had directed letters to be forwarded to the Government agents in Ceylon and Jamaica, asking them to send specimens of cinchona bark for the use of the Pharmaceutical Society.

The report was adopted.

The Council then went into committee to consider the report of the General Purposes Committee.

THE ANNUAL MEETING AND CONVERSAZIONE.

On the motion of Mr. CARTEIGHE, seconded by Dr. SYMES, it was resolved that the annual meeting to elect the Council, to receive the annual report, &c., be held on the 17th of May.

It was likewise resolved on the motion of Mr. CARTEIGHE that the annual *conversazione* be held on May 17; that a Committee should be appointed to carry out the necessary arrangements; and that application be made, as usual, to hold the *conversazione* at South Kensington.

AN IMPORTANT QUESTION.

The Council then went into committee to consider the report of the special committee appointed to inquire into and consider the relations to each other of pharmaceutical education and the Pharmaceutical Society's examinations.

On resuming,

Mr. SCHACHT moved, and Dr. SYMES seconded,

That the consideration of the report be deferred to the next meeting; and that in the meantime a copy of the report be sent to each member of the Council.

This was unanimously agreed to.

MEMORIAL FROM A CHEMIST.

A memorial was read from Mr. Wm. Bruce, who stated that after serving an apprenticeship to a chemist in England he went to Queensland in 1866, and passed the examination of the Medical Board of that colony, and carried on the business of a chemist there until 1877, when he returned to England in consequence of his wife's ill-health. He now wished to set up in business here, but not having been registered in this country in 1868 or 1869 he was shut out from carrying on business unless he passed the Preliminary and all the other examinations. He memorialised the Council to grant him a certificate.

Mr. YOUNG said the applicant was a thoroughly respectable man, and they had evidence that he had served a regular apprenticeship in this country. When the Act was passed he did not contemplate ever returning to England, and he therefore did not comply with its requirements; but on the ground of his having carried on business there for 10 years, and as he held a certificate, he thought he could obtain permission to act as a chemist in England.

The SECRETARY said they had had several applications of this kind; but they were compelled by the fourth section of the Act of 1868 to refuse to accede to them.

The PRESIDENT remarked that, however much they might sympathise with Mr. Bruce, they were compelled to refuse his request.

Mr. YOUNG said the memorialist would be satisfied with this reply.

The Council then adjourned.

PROTECTED PHARMACY.—In October of last year a boot-maker of Artern (N. Prussia) advertised in a local paper that he was proprietor of the best remedy for corns. One of the apothecaries of the place sued him for unlawful dealing in articles which were the sole privilege of the apothecaries. He appeared before the county court, and being asked if he were guilty of having sold a remedy for corns, archly replied that he had only advertised the ownership of such a remedy. "Besides," said he, "I should never think of selling that remedy, for it consists of my well-formed last." The court acquitted him.

Pharmaceutical Society of Ireland.

THE monthly meeting was held on the 1st inst. at the College of Physicians, Dublin, Dr. Charles R. C. Tichborne, President, in the chair.

The other members present were Dr. Aquilla Smith, Vice-President; Dr. Collins, Dr. Montgomery, and Messrs. Allen, Brunker, Draper, Grindley, Hayes, Sir George Owens, Payne, and Simpson.

Mr. FENNELL, the Registrar, read the minutes of the last meeting, which were confirmed.

Sir GEORGE OWENS said a vacancy had occurred in the South Dublin Union for a resident apothecary for one of the dispensaries; and the dispensary committee had consented that an advertisement should be inserted for an "apothecary or pharmaceutical chemist." The Local Government Board had approved of the advertisement, which was the first recognition of the suitability of a member of the Pharmaceutical Society for such an office. Some of the members of the dispensary committee wanted to cut down the salary, but he (Sir George Owens) protested against that, and assured them that medical men would prefer a pharmaceutical chemist, because all they wanted was to have their own prescriptions made up. Accordingly the remuneration for the office would be 125*l.* a year, with house, coals, and candle light.

Dr. MONTGOMERY said their thanks were due to Dr. Owens in this matter.

Reports were submitted in reference to the prosecution of Mr. Baxter, at Coleraine. Mr. J. C. C. Payne had attended at the prosecution. The defendant had been convicted, but had given notice of an appeal.

In the course of a discussion on the Baxter case,

The PRESIDENT said: If we get an opportunity of going before the Chief Secretary to ask for amendments of the Pharmacy Act, we should endeavour to have a clause introduced making it necessary for a pharmaceutical chemist having more than one compounding establishment to have a qualified man to conduct the business of each.

THE POISONS ACT (IRELAND) AND PHARMACY ACT, 1875.

Mr. BRUNKER brought up the report of the Committee appointed to consider the above Acts; and the Council resolved itself into a committee to consider the report. Mr. Brunker read the report. It stated that the Committee had taken into consideration the suggestions made at the annual meeting of the Pharmaceutical Society on October 6, 1879, affecting the question of the sale of poisons. The third of these suggestions was as follows:—"To compel all chemists or druggists actually engaged in the sale of poisons, or poisonous drugs, at the passing of the Pharmacy Act of 1875, on making a declaration to that effect, and giving reasonable proof thereof, to be registered on payment of a fee not exceeding 3*l.* 3*s.*, and that such persons shall be styled 'registered druggists.'" The Committee thought there would be great practical difficulty in enforcing that suggestion as it stood; and therefore they recommended that the right to register should be extended to all who are engaged in the trade at the present moment.

The PRESIDENT said it would be remembered that this question was thoroughly discussed at the annual meeting in 1879. A printed report was then agreed to, and they went to the Chief Secretary with it. The matter fell through then owing to the change of Government. They were now going on with the work again.

Mr. BRUNKER observed that the suggestion which he had just read did not refer to the compounding of prescriptions, but only to the sale of poisons. The Council were willing to relinquish the power they had under the Pharmacy Act of calling persons "chemists and druggists."

Mr. HAYES: We want to amend the law so as to have them styled "druggists," and to allow them the privilege of selling poisons.

Mr. BRUNKER: Certain persons have certain rights, and the object of the clause suggested is to make them come in and register, so that we may know whether they are entitled to the privileges they claim or not.

Mr. GRINDLEY said the suggestions made at the meeting in 1879 related to an amendment of the Pharmacy Act. They were now dealing with the Poisons Act.

Mr. BRUNKER said that if it were attempted to carry out a clause in the form originally suggested the great difficulty would be to ascertain who were in business in 1875.

The PRESIDENT: At present we cannot register a chemist or druggist unless he is also a compounder. We want a clause to enable us to get over that difficulty.

Mr. GRINDLEY: The title of "registered druggist" should give no qualification to compound medical prescriptions.

Mr. BRUNKER: It could not do so.

Mr. PAYNE: That should be so stated as to be made clear to every person in the country.

Suggestion No. 3, as amended by the recommendation of the Committee, was then agreed to.

Mr. BRUNKER resumed the reading of the report, which stated that they communicated with Mr. Bremridge, the Secretary of the Pharmaceutical Society of Great Britain. The Committee were of opinion that Parts 1 and 2 of Schedule A of the Poisons Act required revision; and also that any amendments made in the Poisons Act of England should be extended to that of Ireland. They recommended that the additions to the Poison Schedule accepted by the Pharmaceutical Society of Great Britain should be adopted; and that there should be added, in part 2, *new comica* and its preparations and *oil of rue*. Some of the Committee were under the impression that an improvement might be effected by transferring certain poisons from one part of the schedule to another; but there were difficulties in the way of doing that. Power was given to the College of Physicians to add any poison they thought fit to the schedule, but not to transfer a poison from one portion of the schedule to another. The Committee thought it desirable that carbolic acid and other poisonous disinfectants should be sent out in fluted bottles, or in some other vessels having a distinctive shape.

Mr. SIMPSON thought there would be a danger in the use of fluted bottles, because there was a practice of washing them and using them again for other purposes.

The PRESIDENT said that cases of poisoning by carbolic acid had become so alarmingly frequent that something would have to be done about it. One great cause of it was that this acid and other things of the kind intended for domestic uses were constantly put up in common wine-bottles. He considered that the introduction of carbolic acid into either Part 1 or 2 of Schedule A would be an impediment to trade, and that accidents could be best prevented by specially-shaped bottles.

The President and Mr. Brunker described cases of poisoning which had occurred from carbolic acid being kept in wine-bottles; and, after some further discussion, the President suggested the addition of the following clause:—"That it is desirable that a third part of Schedule A be introduced into the Poisons Act, containing a list of articles which may be retailed in specially-shaped bottles, and that it shall be illegal for such articles to be retailed in ordinary wine or beer bottles. This part should contain carbolic acid, chloride of zinc solution, chlorinated lime solution, and chlorinated soda solution." In most cases articles of this sort were sent out in champagne-bottles, which was a most objectionable custom.

Mr. BRUNKER: I do not see the necessity for an additional schedule.

The PRESIDENT: Labelling is not a preventive of accidents at all. In nine cases out of ten the accidents have happened with labelled bottles. The danger consists in their being sent out in ordinary wine or beer bottles, or in bottles resembling them.

Mr. BRUNKER: This recommendation will involve special legislation.

The PRESIDENT: But we are seeking an amendment of the Poisons Act.

Mr. BRUNKER said nine-tenths of the accidents that happened with strong medicines occurred in consequence of the bottles which poor people brought to the dispensaries for them.

The clause suggested by the President was approved of.

Mr. BRUNKER said the Committee recommended that steps should be again taken to bring under the notice of the Irish Office the views of the Council with respect to the amendments in the Pharmacy Act, and that the Government should be urged to enforce the provisions of the Poisons Act.

A draft letter which the Committee recommended to be addressed to the College of Physicians, the College of Surgeons, and the Apothecaries' Hall, requesting their co-operation in securing the enforcement of the Poisons Act, was read and approved of.

The following other amendments in the Pharmacy Act, 1875, which the Council had recommended already, were approved of:—1. The Council having decided to have but the one grade for the compounding of prescriptions, viz., that of a pharmaceutical chemist, this Committee are of opinion that Clauses 15 and 18 should be repealed, and all other clauses relating to the title of chemists and druggists be altered to agree therewith. 3. That a list of "registered druggists" for the sale of poisons shall be published from time to time by the Council of all persons entitled to be placed thereon. 4. That it shall be illegal for any person to sell poisons or poisonous drugs, or to style himself a "druggist," except he shall be so registered, save and except he be a qualified medical practitioner, or duly registered by the Pharmaceutical Society of Ireland, or otherwise exempt by the Pharmacy Act. 5. That it shall be unlawful for any registered druggist to keep open shop for retailing, dispensing, or compounding medical prescriptions. 6. That the penalties for infringement of this Act and modes of recovering them shall be the same as provided in the Pharmacy Act. 7. That all bye-laws or rules for registration and examination shall be approved of by the Privy Council prior to their being put in force. 8. That in reference to the Pharmacy (Ireland) Act, 38 & 39 Victoria, ch. 57, and more especially in reference to section 30 of the said Act, the word "person" shall be held to mean and imply any association of persons, whether as a partnership, society, or company (limited or otherwise), of which one or more members shall not be qualified under the provisions of the said Act.

The Council then resumed, and, on the motion of Mr. HAYES, seconded by Mr. SIMPSON, the report of the Committee was adopted.

Mr. BRUNKER said that no time should be lost in conveying to the College of Physicians their recommendations in reference to additions to the schedule of the Poisons Act, because the Pharmaceutical Society of Great Britain had sent forward recommendations on the subject to the Privy Council; and it would be well that the amendments should come into force as nearly as possible at the same time in the two countries.

It was decided that Mr. Brunker should draw up a statement of the views of the Council to be submitted to the College of Physicians.

Provincial Reports.

AIRDRIE.

SUPPLYING SALTPETRE FOR EPSOM SALTS.—A labourer named Charles Liddell sued a grocer named James Murdoch at the Airdrie Small Debts Court last month on the following grounds. In November last, Liddell had sent to Murdoch for an ounce of Epsom salts and cream of tartar, and the grocer sent him a mixture of saltpetre and cream of tartar. The pursuer took this mixture and became dangerously ill, his life was imperilled, and he was incapacitated from following his occupation for a considerable period. The defence stated that the defender had purchased the saltpetre at a public sale as salts, and had sold the article as salts! After a long proof, and after hearing carefully the medical evidence in the case, the sheriff decided the case in favour of the defender, but in the circumstances found no expenses due.

DRIFFIELD.

ADMINISTERING DRUGS TO HORSES.—At the Police Court on March 2, Walter Johnson was charged by his master, Mr. John Hornby, farmer, of Kilham, with administering a poisonous compound to his horses on February 14. Complainant went into the stable and found defendant in the act of giving the compound to the horses amongst their corn.

Mr. Bordass, chemist, of Driffield, said he had seen the compound, which contained antimony. It might be serviceable if properly administered, but in the hands of a person ignorant of its properties it would be a dangerous thing. Mr. Hornby stated that three of his horses had died some time ago from the same practice. He did not wish to press for the full penalty (5*l.*), but he wished an example to be made of the defendant. He did not suppose that he intended to poison the horses, but he must have known that it was a wrong thing to do. The bench imposed a penalty of 2*l.* and costs. Under another summons, the bench ordered the defendant to be dismissed Mr. Hornby's service.

EDINBURGH.

EDINBURGH CHEMISTS' ASSISTANTS' AND APPRENTICES' ASSOCIATION.—The eighth meeting of the session was held on February 22 in the rooms of the North British Branch, Mr. William Aitken, president, in the chair. Mr. Simpson gave a concise and very complete account of the sources, properties, and compounds of the element phosphorus, the subject being illustrated by a number of interesting experiments, the most beautiful and successful of which was the production of spontaneously-inflammable phosphoretted hydrogen. The ninth meeting of the session was held on March 1 in the rooms of the North British Branch, Mr. William Aitken, president, in the chair. Mr. William Hutton read an essay on "Paper and its Manufacture." Mr. Hutton first sketched the history of papermaking from the earliest times, and concluded with an interesting description of a visit which he had paid to a large paper manufactory, the various stages in the process from the raw material to the finished product being fully described and explained. The secretary exhibited specimens showing the various stages in the manufacture of paper from sawdust.

GUERNSEY.

A SALE OF POISONS ORDINANCE.—We are favoured by Mr. H. Cumber, jun., with the following translation of an ordinance which has lately come into force for the island of Guernsey. Writing on the 18th ult., Mr. Cumber says this ordinance "was passed in January last, but has only this week been attested by the Bailiff (our chief civil magistrate). This ordinance is provisional, and is to remain in force for one year, after which, if it is found to work satisfactorily, it will be made a permanent law. At the close of last year a law was passed to the effect that all chemists who desired to 'practise' in the island for the future must possess a certificate of the Pharmaceutical Society or a first or second class diploma of the French faculty."

Ordinance of the Royal Court concerning the sale of poisons passed at the Chief Pleas, January 16, 1882:—

1. It is forbidden to any person, except the chemists and druggists, duly authorised to exercise their profession in this island, to sell poisons.
2. It is forbidden to the aforesaid chemists and druggists to sell poisons unless the bottle, box, or package containing the poison be marked with the name of the poison, the word "poison" in large letters, and the name and address of the seller.
3. It is forbidden them to keep the poisons, the names of which are inserted in the first part of the list of clause 6 of the present ordinance, unless the said poison be kept in a cupboard, box, or other place under lock and key.
4. It is also forbidden them to sell the poisons inserted in the first part of the aforesaid list to minors under 14 years of age, or to persons unknown to the seller.
5. They are bound to keep a special book in the following form:—

Date	Name of Purchaser	Name and Quantity of Poisons Sold	Purpose for which Required	Signature of Purchaser

And to insert therein the above-named details referring to each sale of poison mentioned in the first part of the aforesaid list.

6. The following are the articles known as poisons, and are herein denominated by their English names:—

PART I.	PART II.
Arsenic and its preparations	Oxalic acid
Prussic acid and preparations	Chloroform
Cyanide of potassium and all metallic cyanides, their salts and preparations	Belladonna and its preparations
Strychnine, and all poisonous vegetable alkaloids and their salts and preparations	Opium, the preparations of
Atropine, preparations of	Poppies, the preparations of
Aconite and its preparations	Red oxide of mercury (commonly known as red precipitate of mercury)
Emetic tartar	Ammoniated mercury (commonly known as white precipitate of mercury)
Corrosive sublimate	Every compound containing any of the poisons above named, when prepared or sold for the destruction of vermin
Cantharides	The tincture and all vesicating liquid preparations of cantharides
Savin and its oil	
Ergot of rye and its preparations	
Chloral hydrate	
Essential oil of almonds, undeprived of prussic acid	
Opium	
Corrosive sublimate, solution of	
Corrosive sublimate, yellow lotion of	
Morphia acetate, solution of	
Morphia hydrochlorate, solution of	

7. Any person infringing any of the above articles will be liable to a fine of not less than 2*l.* sterling, and not exceeding 20*l.* sterling. Half of which fine shall be paid to Her Majesty and the other half to the informer.

8. The ordinance of the Chief Pleas of January 18, 1730, concerning the sale of arsenic will be repealed.

9. This ordinance will remain in force until the Chief Pleas after Christmas next.

LIVERPOOL.

CONROY'S MALT COFFEE.—Last month we noticed this article in our columns. On March 1 the excise officers visited the factory, in Fleet Street, Liverpool, and seized all the coffee in stock—more than 2 tons. On assurance, given by Mr. Conroy, that the coffee would not be touched, it was left in the building under the charge of an officer. No reasons for the seizure have yet been published, but a clause in the Sale of Food and Drugs Act enacts that no mixture of coffee with any vegetable substance other than chicory may be sold unless the substance shall have paid the duty chargeable on chicory or other vegetable substance when so used. The ingredients of the malt coffee are simply coffee and malt. Messrs. Evans & Co. state that they were taken completely by surprise in the matter. They write:—"Before we began to make the article we informed the chief supervisor of the Inland Revenue here what we were about to do, and it was with his full knowledge that we commenced the manufacture. Letters patent have also been granted for the process, and during the last four or five weeks large sums have been expended in advertising and bringing it before the public, all within the knowledge of the Excise. You may therefore imagine our surprise, that without the slightest notice or reason being given to us, they seized the whole of our stock, and put a stop to the works." Mr. Conroy and one of the firm at once proceeded to London, and were in negotiation with the principals of the Excise Office, and expected to arrange matters shortly.

NOTTINGHAM.

NOTTINGHAM AND NOTTS CHEMISTS' ASSOCIATION.—The usual monthly meeting of this Association was held on February 23, under the presidency of Mr. R. FitzHugh, F.C.S. There was only a very moderate attendance. Mr. J. Rogers, F.R.M.S., read a very interesting paper upon "The Microscope and some of its Recent Revelations." The lecturer, referring to the price of instruments, observed that the highest-priced ones were not always of the greatest use; in fact, most of the greatest discoveries had been made with cheap or only moderate-priced instruments. A good working instrument could be obtained for 10*l.* or 12*l.* The lecturer dwelt upon the recent applications of the instrument—notably in the detection of forgery, as by its application the slightest discrepancies in writing, erasures by knife, age of paper, and even differences in ink can be detected. He then referred to it in its evidence of life in planetary and other worlds, by detecting evidences of animal existence in meteoric stones, &c. He lastly referred to its use as a means of detecting adulterations in foods and drugs, and of its value to the chemist in analysis, and as a test for the presence of poisons.

THE PURITY OF CHLOROFORM FOR ANÆSTHETIC PURPOSES.

BY W. INGLIS CLARK, D.Sc., &c.

THOSE who have studied pharmaceutical literature for the last 20 years may have observed how frequently the stability and purity of chloroform have been brought into public notice. When first introduced for anæsthetic purposes it was by no means so pure as it is now, so that when Dr. Gregory pointed this out, manufacturers endeavoured, by preparing an absolutely pure chloroform, to satisfy all requirements. This was accomplished by treating the crude article with strong sulphuric acid, and there are many who still remember the disastrous results which followed. The absolute chloroform, when exposed to light, air, and moisture, or in some cases to one of the agencies alone, invariably decomposed in a few days, or at latest in a few months. The products of decomposition were extremely irritating, and the article could not be used. In this dilemma manufacturers endeavoured to discover the cause of this change, as well as to obtain a remedy for it. The change was ascribed by various experimenters to moisture adhering to the chloroform, to the presence of air in the bottle, or to the exposure to light; while Sir R. Christison, having noticed red fumes issuing from a still in which chloroform was being distilled, believed that the presence of nitric acid in the sulphuric acid used for its purification was the cause of trouble. Experiment showed, however, that while traces of nitric acid undoubtedly hastened decomposition, chloroform, absolutely pure (or at least as pure as possible), and specific gravity 1.500, would not keep, even though nitric acid had been present in the sulphuric acid. It may still be shown that the presence of some foreign body is the cause of decomposition, but as yet the fact remains that chloroform, when quite pure, will not keep. The remedy, a harmless and effectual one, was soon forthcoming, for it was discovered that if from $\frac{1}{10}$ to $\frac{1}{2}$ per cent. of absolute alcohol be added to pure chloroform, specific gravity 1.500, the resulting mixture keeps indefinitely under ordinary circumstances, and has a specific gravity not less than 1.497. I have specimens, prepared in 1866, which are still satisfactory for use, while a sample, part of which had been in use at the Crimean war, came into my possession a couple of years ago, and was found above suspicion. I have been particular in dwelling on these matters because they have an important bearing on what has to follow. It will be noticed that the Pharmacopœia sp. gr. is 1.497, which allows this small admixture of alcohol, but at various times in recent years this has been overlooked by experimenters, and various tests, the principle of which has been the recognition of a trace of alcohol, have been proposed to test the purity of chloroform. The error of such tests has been exposed, and in every case the matter has dropped without any serious question arising. More recently, however, a test proposed by M. Yvon has been brought forward, which, although, I believe, rejected by his fellow-pharmacists, has caused considerable alarm among surgeons and annoyance to manufacturers in this country, owing to the fact that it was brought forward and recommended in a semi-official way in two editorials in the *Pharmaceutical Journal*. It appears that in France chloroform is not, as a rule, so pure as in this country, and that three grades are found in the market, the lowest of which is very impure. The tests in general use, not being considered stringent enough, M. Yvon set about finding another test, which should emphatically set the seal only on pure chloroform. Such a test was found in permanganate of potash, and the method of applying it is as follows:—A solution con-

taining 1 part of permanganate of potash and 10 parts of caustic potash in 250 parts of water is prepared, and has a fine violet colour. To test chloroform, place 5 c.c. of it in a clean test-tube, and add to it 1 c.c. of the test solution; agitate for ten minutes, and if, after this time, no green colour is produced, the chloroform is pure. On applying this test to any sample in the market the green colour was developed, at the latest, in half a minute. In order to produce a pure chloroform he recommended that instead of using sulphuric acid, makers should use an alkaline solution of permanganate of potash, agitating this with the chloroform until no further discoloration took place. The purified chloroform, dried, distilled, &c., would then be pure and stand the test.

After a critical examination of it I have no hesitation in pronouncing the test worthless, and even positively dangerous. Before proceeding to state my reasons I would just point out: 1, that the test as applied makes no allowance for the presence of alcohol, 1-10th per cent. of which would at once produce the green colour; 2, that until the chloroform which has been purified by this process has been proved to keep for at least a year with certainty, it cannot be considered a safe article to send out.

3. That sulphuric acid, if agitated with crude chloroform, will readily produce an article which stands M. Yvon's test.

4. That on the manufacturing scale, all the chloroform (at least that produced by the leading makers) will stand the test prior to the addition of the small percentage of absolute alcohol.

5. That until it can be shown that so small a trace of alcohol is objectionable, or until some simpler or safer remedy is proposed, manufacturers will continue to hold to a certain process rather than risk themselves by sending out absolute chloroform. Fortunately my task is easy in refuting the new test and process, for it will be granted that if chloroform which is unmistakably impure is stamped by the test as pure then the test is worthless. Such is the case.

1. The dregs of a batch of chloroform prepared by the ordinary process, and separated by the usual fractional distillation, smell decidedly bad to the nose, impart a brown colour to pure sulphuric acid, and, therefore, are rejected, and worked up again in practice. These, however, stand the test perfectly, and are pronounced pure chloroform by it.

2. I prepared some pure (?) chloroform by M. Yvon's process, treating with strongly alkaline solution of permanganate. The chloroform so obtained stood the test perfectly, but was in reality very impure. On addition of strong sulphuric acid to it, that liquid formed a black layer at the bottom at once—a sign of excessive impurity. If anything more were needed to bear out the impurity of the sample, the smell was so disgusting and nauseating as fairly to astonish one accustomed to the fragrant odour of the ordinary article. From all that I have said it will be evident, not only that the chloroform as prepared in Edinburgh is a pure article, but that the test is worthless—1, as condemning an eminently pure article; 2, as passing and pronouncing pure an article which is confessedly impure.

CINCHONA IN RÉUNION.—The attempts which have been made to acclimatise this valuable tree in Réunion have proved successful. The few plantations of cinchona which now exist in the interior of the island are very promising, and it has been ascertained, after various experiments, that the cinchona tree flourishes best in Réunion at an elevation of about 2,000 feet, and away from the seashore. An even temperature and a rich soil are required for the successful cultivation of these trees; they thrive well if planted under the shade of other trees and protected from high winds.

The three qualities of cinchona trees cultivated in Réunion are the *Cinchona succirubra*, *Cinchona calisaya*, and *Cinchona officinalis*. The last-named quality is said to be the most valuable. The *C. succirubra* is, however, easily grown, as it will flourish at a moderate elevation, and only requires to be well manured and sheltered.

Experiments in cinchona culture are likewise being made in the neighbouring British colony of Mauritius, where I note that no less a sum than 111,000 rupees is annually drawn for the purchase of drugs prepared from the cinchona tree.—*Consul Annesley (Report for the year 1880).*

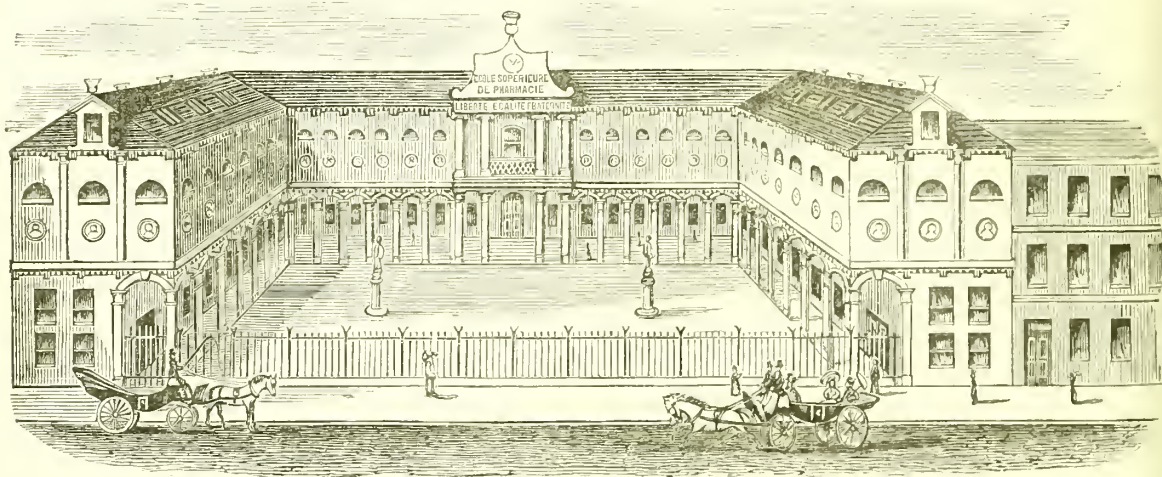
THE NEW SCHOOL OF PHARMACY, PARIS.

THE new School of Pharmacy at Paris, which is now sufficiently completed to receive the students in pharmacy of that city, is by far the finest monument of honour which our profession can boast of in Europe, and it is worthy of the fame which pharmacy acquired in the French capital several centuries ago, and has ever since maintained. Everyone knows that pharmacy in France is a faculty of the University, and all the regulations of pharmaceutical education are under the control of the University of Public Instruction. The new school has been built by the State, and it is doubtful whether any other branch of science or art in France is at this moment so comfortably lodged. It faces the new Avenue de l'Université, which opens from the Luxembourg Gardens, and the buildings and botanic garden associated would more than equal, we imagine, though we have no exact details of the space of either, the whole of Bloomsbury Square. There are at present nearly 500 students in daily attendance. There are six large buildings for students' laboratories and class-rooms, devoted to the different subjects which a French pharmacien has to study before he is granted his diploma. These schools are annexed to the front building, and with it form two sides of the territory allotted to pharmaceutical education by Govern-

500 persons, and arranged with great convenience for the lecturer or experimenter.

One very interesting feature remains to be mentioned, namely, the memorials of past heroes of pharmacy, to whom, both within and without the building, great honour is paid. In the Court of Honour are statues of Vauquelin, the eminent director of the school, from its formation as a Government institution in 1803 until his death in 1829, and Parmentier, a noted army pharmacien, whose fame chiefly rests on his energetic and at last successful efforts to dissipate in France an almost universal prejudice against the potato. Besides these there are, along the front of the building, 36 medallions, representing men more or less entitled to this sculptured immortality. These are Balard, Carenton, Pelletier, Robiquet, Dumeril, Brogniart, Scheele, Bayeu, Macquer, Rouelle, Geoffroy, Seba, Dante (!), Charas, Newton (!), Lemery, Boulduc, Baumé, Lavoisier, Berthollet, Chaptal, Laugier, Sérullas, Thénard, Guibourt, Valenciennes, Liebig, Gerhardt, Pelouze, Davy, Jussieu, Fourcroy, Houel, Swammerdam, Claude Bernard, and Dumas. Now it is quite certain that no one could have made a selection of a pharmaceutical pantheon which would have exactly satisfied the next comer; but it must surely have needed genius itself to have got so far outside of all ordinary ideas as has been done in several instances in this assemblage.

We shall not presume to criticise the selection of French



ment, the rest being occupied by the botanic garden already mentioned, with its conservatories. The front building contains on the ground floor the director's and the secretary's offices, a series of private laboratories for the professors, the Salle des Professeurs, the Salle des Actes, and some residential apartments. The Salle des Professeurs, which is a sort of council-room, contains life-size portraits of Orfila, Vauquelin, and Pelletier. The Salle des Actes, where the students' final and public examination takes place, is an extremely handsome room, decorated in chocolate and gold, and containing round the walls exactly 100 panels for oil portraits of the professors and directors of the school. Ninety-eight of these panels are already occupied. Over the door a large painting represents Nicolas Houel, the founder of the Ecole de Pharmacie, and at the other end of the Salle, behind the presidential chair, is an emblematical painting surmounted by the arms of France. On the upper floor are the practical examination rooms, six spacious museums, containing splendid collections, representing respectively zoology, physics, botany, mineralogy, chemistry and pharmacy, and materia medica. These and the library, which is on the same floor, were all receiving their treasures when we went through them early this month, and the extent of the collections may be judged when we say that each room measures fully 60 feet by 30, and that we were informed they are none of them too large for their purpose. At the back of the building, and extending into the botanic garden, are two noble amphitheatres, each adapted for an auditory of about

sarants, nor could we have been at all surprised if these memorial medallions had been in honour of Frenchmen exclusively. But, as it was thought desirable to include representatives of the pharmacy of other nations, a small note of wonder may be permitted. The foreigners honoured were Scheele, Seba, Dante, Newton, Liebig, Davy, and Swammerdam. Scheele was perhaps the truest and ablest pharmacist proper the world has ever produced. As an assistant he won European renown, and though he might have had the highest position in the University of Upsala which the Government could bestow, he preferred to live as a simple pharmacist, with quiet and leisure for the prosecution of his beloved researches. He could not have been omitted. The name of Liebig would suggest itself to all; Sir Humphrey Davy is by no means out of place; and of the two little-known Dutchmen, Seba and Swammerdam, the first, at least, seems to have been worthy of the choice. He was a pharmacien at Amsterdam, and, having in early life travelled largely in the East, he made in the course of his life two splendid collections of natural history, the first of which he sold to Peter the Great, and which is still in the possession of the Academy of Sciences of St. Petersburg. His second collection was dispersed at his death. Swammerdam was the son of a pharmacien, but was himself educated as a physician, but he never practised that art. He devoted himself first to anatomical studies, and afterwards to entomological studies. Later in life he became a religious mystic, and became possessed with the idea that the investigations of his earlier life had offended the Deity.

He abandoned them, and, as an act of repentance, destroyed a part of his works.

There still remain in our list the two names most famous of all, but assuredly the least appropriate in this company. For an explanation of the reasons for including Newton and Dante among the honoured elders of pharmacy we consult an interesting little book by M. Edmond Dupuy, entitled "*Notices Biographiques sur les Médallions de l'Ecole Supérieure de Pharmacie de Paris*." Newton's connection with pharmacy occurred in this wise. When he was about 17 years of age he was sent to a school at Grantham, and while there he lodged with an apothecary named Clarke. Dante's association with the profession is scarcely any closer. "Wishing to obtain public employment, Dante was obliged, in accordance with the laws of Florence, to inscribe his name on the list of one of the guilds into which the city was divided. He selected the sixth register, which was that of apothecaries and physicians." It would be difficult to imagine any eminent man who might not have been included in the series if such reasons as these are sufficient to give them a title.

THE OLD PARIS SCHOOL OF PHARMACY.

[Antoine A. B. Bussy.]

BY JOSEPH INCE.

OME years ago the writer of these notes was sent to Paris as a student in pharmacy and literature. He took with him a letter of recommendation to Professor Guibourt, and even at this long interval of time retains the liveliest sense of the kindness with which he, in common with other English residents in the Quartier Latin, was received. The old School of Pharmacy was a plain and unpretentious building, situated in the Rue de l'Arbalète. It was close to the Garden of the Luxembourg, a favourite academical resort, which then derived an additional attraction from the constant presence of Michelet, the historian. The Sorbonne and the Ecole de Médecine were in the same district. Modern improvements under the guidance of Baron Haussmann have quite transmogrified the locality; the narrow, wriggling streets, with a gutter running down the middle, as in the former Rue St. Jacques, have disappeared, together with the huge wooden elephant which stood on the Place de la Bastille, now rendered historic in the pages of Victor Hugo.

We have ventured to indulge the hope that British pharmacists might like to know something about foreign study, though not of recent date, and though a splendid edifice has replaced the once modest abode of pharmacy. One cannot altogether accept the estimate that used to be placed upon the superiority of French pharmaceutical teaching as compared with our own at the same period. It was medicine, and not pharmacy, the Ecole de Médecine and the Sorbonne, not the Ecole de Pharmacie, that reigned supreme; and we mention this fact in contradiction to the depreciatory commonplaces not infrequently uttered respecting English home instruction. Two men, justly celebrated—Orfila, the great toxicologist, and Dumas, the great chemist, drew crowds to their respective lectures. It was a fight to get seats, and the rush to obtain good places was not less than may be witnessed at some special performance at the theatre. A vast audience would assemble an hour before time, and wait patiently in a snow storm, as we can personally aver, where Orfila was giving his winter course on Chemistry. No sooner was the signal for opening heard than the students scampered pell-mell over the benches, and in five minutes the lecture-room could hold no more, the window-sills being filled with rows of occupants, who from that rather perilous eminence surveyed their companions. Precisely the same enthusiasm prevailed at the summer course of Chemistry by Dumas at the Sorbonne. It was a very different assembly, though the student element was in the ascendant. Ladies and ecclesiastics were allowed to occupy the front seats, and there was a fair attendance of the general public. The perfect character of the demonstrations, as well as the remarkable style of the lecturer, attracted universal attention; nor during the intense heat

of a Parisian summer were there manifested any signs of decreased interest.

Such was not the condition of affairs in the Rue de l'Arbalète. The lectures were respectably attended—sometimes poorly, and there were always vacant places. Guibourt, a genial little man, short in stature and short in sentences, lectured (one might say, of course) on *materia medica*. He was wonderfully learned in his own subject; his power of what is termed recognition was extraordinary; he had a special memory for drugs, as some have for music; he could detect the spurious from the genuine with unerring skill, a faculty of his to which the late Daniel Hanbury used often to allude; and he had written a book, "*L'Histoire des Drogues*," which was, and still is, before the world. Moreover, no Englishman would be so unjust to his memory as not to acknowledge the unvarying cordiality with which he welcomed a stranger to the hospitalities of his house. But as a lecturer he is not to be put in the front rank. With sharp and rapid utterance he would describe far too many substances in the allotted hour, and left his hearer under the impression that he had listened to an exhaustive catalogue of articles of *materia medica*, too numerous to be well recollected. Of this, his enumeration of the various sarsaparillas of commerce was a striking instance; and we are obliged reluctantly to confess that there was more fatigue than instruction in this process of conveying information.

Chevalier, undoubtedly a great authority, gave a course on the therapeutics and toxicology of drugs with extreme energy of manner, stating in his introduction that a certain amount of enthusiasm was necessary to awaken and sustain interest. He was fairly successful in the attempt; an average class attended the course of physics, but chemistry suffered much from the brilliant manner in which the subject was treated elsewhere.

A laboratory—to which reference will be again made—was at the disposal of the students. This, obviously a step in the right direction, was said to be the first establishment of the kind devoted to the purposes of pharmacy. So great has been the advance in this direction, that it would be unadvisable to describe its general arrangement. The fact of its existence was most creditable, and it met a decided want. When we passed directly from the old School of Pharmacy of Paris to the new School of Pharmacy in London we recognised that, whatever might have been the state of English pharmaceutical education in times gone by, it would then bear comparison with anything to be had in Paris. A practical system of teaching was in full operation: the lectures were of indisputable excellence, and the defect in the scheme lay in the political position of British pharmacy, and not in the wise provisions of its promoters.

One professor at the Ecole de Pharmacie, of whom mention has been purposely omitted, set himself to raise French pharmacy, and the school in which it was taught, by the direct introduction of practical work in *all branches* of technical training. This was Bussy, a pharmacist so admirable in his day, and so worthy of imitation, that we have not hesitated to extract largely from his memoir by M. Alf. Riche, so as to present some particulars of his life.

There are many points in which his career was remarkable, particularly when it is remembered that, like no few others of his distinguished companions, he began, and for a long time continued, as a simple chemist and druggist. While we refuse to admit the alleged superiority of French pharmaceutical teaching to our own, we are never so happy as when we have to familiarise the English reader with the names of our Continental brethren who have adorned that calling in which we all endeavour to excel.

Antoine-Alexandre-Brutus Bussy was born at Marseilles, May 10, 1794. He studied at Lyons, and afterwards at the Ecole Polytechnique between 1814–15. The strange classical name which he bore was characteristic of the epoch. Paris was then invaded, and Bussy was wounded in the trenches of Vincennes, and a slight scar on his lower lip marked through life the injury he had received from a Cossack lance.

The occupation of Paris by the allied army caused him to return to Lyons, and, fearing to lead an inactive life when peace was proclaimed, he left the army.

Choosing pharmacy for his pursuit, he remained in a provincial establishment for three years, and went back to

Paris in 1818. There he gave special attention to chemistry, having previously gained the notice of Robiquet, who was Thénard's demonstrator while Bussy was a student at the Polytechnic. After having passed some months in the pharmacy of Boudet, he entered Robiquet's establishment, situated in the Rue de la Monnaie. This savant admitted him to his laboratory, where he taught his pupils. Soon Bussy became director, and there eventually founded the celebrated manufactory of chemicals which supplied all public establishments.

In 1821 he was chosen demonstrator of chemistry at the School of Pharmacy at Paris, and by his own exertions qualified himself for the superintendence of the several grades of instruction, till in 1844 he was made director.

He only resigned these functions in November, 1873. The way in which he discharged his duties rendered his term of office (*le décanat*) remarkable. He anticipated many modern improvements, and showed himself in advance of his times. He was the first to introduce a distinctly practical course of chemistry, with subsequent manipulations, in the school, and, as Dean, he endeavoured to promote the same practical system into the other departments of instruction.

With this view a fourth examination, which consisted of the application of the theoretical knowledge required in the third, was made separate and distinct, in order that mere book-learning should not supersede technical and manual skill. Ed. Robiquet, M. Regnault, and afterwards Buignet, followed the example. Practical manipulations in physics were at once instituted.

At this moment laboratories are created for students in every direction, and for various purposes. Other countries have even surpassed the Paris faculties of science and medicine in the line of practical investigation, but, thanks to Bussy, the same remark cannot apply to the teaching of the *École de Pharmacie*.

We can lay no claim as Englishmen to have inaugurated this method, and to Bussy must be conceded the undisputed honour of having continuously insisted on its adoption. "Gentlemen" (he said in 1867 to the students), "there is a necessity to enlarge our sphere of practical manipulations, on account of the rapid progress of manufacturing industry. Every day the laboratory operations of the pharmacist become more restricted; chemicals produced on a large scale, and by the aid of machinery, must of necessity distance competition. But it behoves the pharmacist to know how to examine such articles, and to effect their purification before giving them the sanction of his name."

For many long years Bussy strove to remove the School of Pharmacy from the Rue de l'Arbalète, and suggested the actual plans for a new establishment.

Disastrous circumstances prevented the realisation of the idea until a very recent date.

Bussy, as a young man, lectured on chemistry at the *Athénée* of Paris, as also did M. Dumas. For some time he taught at the *École de Commerce*. He was received Doctor in Medicine in 1832; his thesis on the Comparison of the Classification of Organised and Inorganic Bodies procured him the right of acting as substitute to the aged Deyeux, and for many years Bussy gave a course of Pharmacology in his place.

Honours followed in quick succession, for Bussy was second on the list of presentation when Regnault was enrolled a member of the *Académie des Sciences*, and Bussy himself received that distinction in 1850. He was president of the *Société de Pharmacie* in 1836, and also in 1868. This admirable pharmacist was chosen in 1856 President of the *École de Médecine*, and the august body suspended its sitting at the meeting when his death was formally announced.

It need scarcely be added that Bussy was a member of most of the Pharmaceutical Societies at home or abroad. His literary work must not be passed over without comment. He was president of the Committee of the *Journal de Pharmacie et de Chimie*, and chief editor since 1826. He presided over the monthly meeting in January last, and discussed in the most lively manner the composition of the forthcoming number; and ten days before his death revised the proofs. Bussy was the French translator of Faraday's "Chemical Manipulations," and joint author with Boutron of a "Treatise on the Falsification of Drugs, Simple and Compound." He was engaged on the revision of the *Codex*

in 1836 and 1863, and was on the jury of different international exhibitions. In 1822 he contributed the first analysis of suberic acid, his views having been subsequently confirmed.

Bussy was the first to make an exact analysis of the vegetable alkaloids, specially of morphine, and he demonstrated the presence of nitrogen in their composition, which had previously been denied. Dumas, Pelletier, and Liebig have in turn confirmed this important fact. Without this knowledge it was impossible to assign a fixed place to the alkaloids in any general classification, and it is well known that Gerhardt and Kekulé in dividing all bodies into four groups, placed the alkaloids in that of which ammonia is the type.

Bussy gained the first prize offered by the Paris Society of Pharmacy for his essay on the power of various charcoals as decolorants. This treatise put the employment of animal charcoal in sugar refining on a scientific basis. It was shown that the bleaching of a liquid was not due to the destruction of the colouring matter and its transformation into carbonic acid; but that the charcoal combined with the colouring matter in the same way as a tissue subjected to a dye. Bussy was also the first to liquefy sulphurous acid gas (and many others) by the lowering of the temperature, and gave a process for obtaining liquid sulphurous acid in quantity. He determined its density, boiling-point, and the degree of cold produced on its evaporation. The low temperature thus obtained he applied to the congelation of mercury and to the liquefaction of chlorine, ammonia, and cyanogen. When at a later period Thilorier showed how to liquefy and render solid carbonic acid gas, Bussy utilised the idea to effect the liquefaction of sulphuretted hydrogen and other gases.

Bussy next turned his attention to sulphuric acid, and demonstrated that, contrary to the opinion of Berzelius, it could be rendered anhydrous. He established by experiment that the fuming acid so produced was not a compound of sulphurous and sulphuric acid as had been maintained by Fourcroy. Moreover, he proved that France need not purchase from Germany the Nordhausen fuming acid which was required as a solvent for indigo.

These researches were rewarded by the first prize offered by the Society of Pharmacy of Paris for an essay bearing title, "Can Sulphuric Acid Exist Without Water?" About this time Bussy associated himself in literary and scientific work with Le Canu, and the two occupied themselves with the study of the fatty bodies, respecting which they published several joint memoirs. His next researches were on glucinum and magnesium, saponine and paraffine, and on the odorous principle of *Sinapis nigra*.

Bussy discovered that the pungent smell of mustard was not produced by a compound pre-existent in the seed, but that it was formed by the reaction of two inodorous bodies in a way similar to essence of bitter almonds; the amygdaline of the latter corresponded to the potassium myronate of the former. Bussy's investigations on arsenious acid have become classic. He showed that the vitreous acid was much more soluble than that in crystals, and also that various means, sometimes slight, might effect an interchange of these physical conditions. Calcined magnesia was found capable of absorbing arsenious acid in solution, rendering it insoluble and inert.

The minor contributions to pharmaceutical literature of this indefatigable worker were as numerous as they were varied. Together with Buignet, who left commercial pharmacy to become professor of physics, he undertook the investigation of the large and difficult question of the plastering of wine, details of which must be passed over. Afterwards the two united to study the properties of hydrocyanic acid. Three memoirs were devoted to this research. When Bussy resigned his functions as director of the School of Pharmacy, he in no way relaxed his efforts in the promotion of pharmaceutical education.

He now opened a special laboratory at the School for the use of those who desired to compete for the prize essay at the close of the sessional year. He constantly enlarged on the value of attempting some such original research as a fit termination to the regular curriculum. He believed it to be the honourable ambition of every real student to work out some particular study of his own; and he entreated the editors of the *Journal de Pharmacie* to give the aid of friendly criticism and publicity to these first aspirations.

Bussy was extremely modest in demeanour, and not given to much speaking. He shrank, indeed, from public display, although once a year he never failed to address the students.

He ordered that no oration should be pronounced over his grave, and that no military honours due to his rank should be paid at his funeral.

Once, indeed, he broke through his habitual reticence, and in 1873, at the Académie de Médecine came out with a noble speech in the defence of pharmacists attached to the military service. The subject of the debate was "The Relations to be established between Medicine and Pharmacy in the Army."

It was a most dignified and successful assertion of the independent position pharmacy should enjoy, and of the advantage even to the medical profession that such independence should be maintained. His last important creation was that of the Union Scientifique of the pharmacists of France—a project realised in 1876. Bussy was chosen president of this Association in 1877, and he offered annually a prize of 20*l.* for the best research on physics, chemistry, or natural history bearing on pharmacy. Up to the middle of the last winter Bussy assisted at the meetings of the Académie des Sciences and de Médecine, while recently he read a report before the Council of Public Health on "The Manufactories of Hydro-fluoric Acid."

He died on February 1, 1882, aged 88.

Surely we may take pride in having numbered such a distinguished *savant* in our ranks. Men like these make us feel small when we compare our intermittent efforts with their uninterrupted work. Many of the results which Bussy worked out are now familiar things, and we have forgotten, never knew, the source from which they were derived. Better methods of analysis and research have not upset the value of his original investigations. Let us, like him, "fill up and crown the golden hours," and, like him, quietly resolve to do our best.

THE HISTORY OF THE WORD "DRUG."

In our last note we concluded that in Chaucer's description of the physician the expression "dragges and his curiares" corresponded to the "dyas and dragges" in Piers the Plowman, and that the passage did not prove the existence of the word "drug" in Chaucer's time.

The conclusion was hasty. Dr. Murray, the editor of the great dictionary projected by the Philological Society, has kindly pointed out that in the "six text" Chaucer, "of the six best MSS. three read 'drogges,' 'droggis,' and three 'drugges,' evidence which quite sets aside the solitary unsupported 'dragges' of the Harleian MS. No. 7,334. . . . There seems to have been undoubtedly a popular confusion between 'drugges,' or 'drogges,' and 'drages,' 'comfits,' brought about by similarity of form.

Between Chaucer's time and the end of the fifteenth century we have met with no materials for the history of this word. At this point Professor Flückiger becomes our guide, and, as might be expected, we can add little to the facts he brings forward.

Nicolaus Prepositus belonged to the School of Salerno and wrote two Antidotariums between the times of Copho (end of the eleventh or beginning of the twelfth century), and of Egidius Corboliensis, who was physician to King Philipp Augustus of France (A.D. 1180 to 1223). But another Antidotarium has been often printed under the title "Dispensarium magistri Nicolai prepositi ad aromatarios." It cannot have been compiled earlier than the fifteenth century, and there is a printed copy in the British Museum library, black letter, without title page, pagination, date, printer's name, or place of publication, which is ascribed by authorities to the year 1490. Professor Flückiger quotes from the Lyons edition of 1536 the following explicit statement, lib. 1, cap. 14. We have verified this in the earlier edition of 1490:—"Et voco drogvas medicinas magni precii quæ ad nos deferentur a longinquis partibus." The author enumerates as "drogvas" ambra, amomum, balsamus [gileadensis], amphora, cassia lignea, calamus aromaticus, cardamomum, cubebæ, crocus, muscus, spongia, spuma maris, zaccara [sac-

charum], and other things, some of which have fallen out of use. The word "drogua" is used repeatedly in this work.

William Bullein, physician, published, in March, 1562, his "Bulwarke of Defence against all Sicknes, Sornes and Woundes, &c.," black letter. He gives at one place rules for the guidance of apothecaries. Rule 18 is "That he delyte to reede Nicolaus Myrepsus," and three other works. This Nicolaus was often confused with Nicolaus Prepositus, and we cannot wonder if the word drug is found in use when these works were studied. Rule 4: "His garden must be at hand with plenty of *herbes, seedes, and rootes.*" Rule 5: "To sow, set, plant, gather, preserve, and keepe them in due tyme." Rule 13: "That he neither buy nor sel *rotten drugges.*" Here is a clear distinction between simples, which he must sow, gather, and preserve himself, and drugs, which he must buy.

Professor Flückiger quotes from a work to which we have no access ("Visiani, Della Origine ed anzianità dell' orto Botanico di Padova," Venezia, 1839) a passage which gives a similar "definition by inference." Marco Guazzo (circa 1545) says that plants, trees, and shrubs, minerals, and other Drogherie, are brought by the Venetian merchant ships from their habitats, especially Candia and Cyprus. . . . He shows how useful it would be if in the botanical garden they established "una spetiera" (collection of drugs) which would serve as a standard of comparison for the "cose secchi di Levante," dried things from the Levant.

On April 10, 1563, Garcia d'Orta published at Goa, India, his "Coloquios dos simples e drogvas he cousas medicinaes da India, &c.," the first work we know in the title of which the word "drug" appears. In 1567 Clusius translated this into Latin, adding notes, and Professor Flückiger quotes from the edition of 1593, page 125, this passage, which occurs under Calamus aromaticus:—"Aromaticum voco non odoratum, ut plerique alii, quandoquidem aroma odorem non significat sed quod vulgo drogavam vocant."

In "London Trycale," by R. B., 1612, we read of "rotten garble and refuse outcast of all kinds of spices and drugs." Again, "what good spice, sugar, honey, or other drugges . . . can be sold for so bace a price. Again, "either apothecary, grocer, or druggier, by the cities freedom."

These are the only passages we find which throw light on the meaning of the word. A few others are of interest.

Palsgrave's "L'Eclaircissement de la lang française," 1530 (Genin's ed. Paris, 1850), the first English-French dictionary, does not give drug in the English vocabulary. But elsewhere we read, "Receyte of dyuers things in a medecine, drogges *s. f.* recepte *s. f.*" Sir Thomas Elyot in the preface to his "Castel of Helth," 1541, says, "Without blame to be given to the physytians, sauynge onely that some of them (be) not diligent inough in beholdynge their drouges or ingredience at all times dispensid and tried" (quoted in Richardson).

Bailey defines drugs as all kinds of simples, for the most part dry, for the use of physick, painting, &c.; also "pitiful sorry commodities that stick a hand with tradesmen, old shop keepers."

Dr. Murray tells us that in Scottish usage medicines are always "doctor's drugs" at the present day. The people still say "drögue," "dröguist," and do not confuse "doctors' drögues," with "a drug in the market."

Before considering possible derivations, we will mention two or three etymological absurdities. Scarabelli's "Vocabulario Universale Italiano" gives the Illyrian *dragomiris*, drug, from *drug*, costly, and *miris*, aromatic, perfumed. Fleming and Tibbins' French dictionary gives Armenian *droguezou*=drug. Tommaseo and Bellini, in their Italian dictionary, derive it from Persian *drogua*, fraud, deceit, because drugs are so often falsified. Although this cannot be accepted as the true etymology, yet it has more support than is pleasant to pharmacists. *Droga* in Spanish is a stratagem, artifice, or deceit, as well as a drug; *droguista* is a cheat or an impostor; *droguero* is a cheat, a bad paymaster. Our character here suffers from another confusion of distinct words; *drug* in Dutch and German is a cheat or a cheating fellow; *droglicht*, is an erroneous light. This is sufficiently like the word "drogue" to mislead the public and damage the reputation of druggists.

Modern etymologists accept two possible etymologies. "Diez derives it from Dutch *droog*, dry; which seems right

because the plural *droogen*, lit. dried vegetables and roots, was used in the special sense of 'drugs.' 'Droogen, gedroogde kruiden en wortels, drugs.'—Sewel's Dutch Dictionary" (Skeats' Etymological Dictionary).

"We have in the Celtic-Welsh, *dryg*; Breton, *droeg*, *drouk*; Erse, *droch*, which express in general all that is bad [bitter, nasty]; but while accounting for the sense of worthless things, does not account for the meaning of ingredient,"—Littré.

We have long been tempted to pronounce for Diez's etymology. We think it finds support from the curious title "druggist and drysalter." The latter word is another puzzle. Its precise application is very doubtful. An annual trade circular on drugs and drysalteries appeared in our January number. Cochineal, gum arabic, varnish gums, and turmeric were classed as drysalteries; borax, annatto, gums ammoniacum, assafoetida, benzoin, gamboge, and honey under drugs, in company with other things more easily recognised as such. Simmonds' Commercial Dictionary defines a drysalter as "a dealer in the minerals used in pickling, salting, and preserving various kinds of foods. Also in gums, drugs, dyestuffs, mineral colours, tanning substances, artificial manures, &c." The earliest occurrence of the word we have met with is in one of Johnson's "Rambles," where a retired drysalter is mentioned. The Salters' Company existed as early as A.D. 1380. Doubtless their records would throw some light on the word. Some years ago the question of its etymology cropped up in this journal. One writer suggested that drysalter was a corruption of drug-sorter; another, with more point, said that a drysalter was not a drug-sorter, but a "sort of druggist." But to return. Surely no one ever dealt in wet salts, and it is difficult to imagine why a "salter" should be called a "drysalter." If druggist meant a dealer in dried herbs as opposed to simples, then the drysalter might come into use from a sense of parallelism.

But the wide prevalence of the idea of worthlessness connected with cognate words, the Scotch distinction of doctors' *drogues* from drugs in the market, and the universal belief that good physic is bitter, which is a Japanese as well as an English proverb, lead us to surmise that the word may have a double origin, that the Teutonic "dry" and the Celtic "nasty" may be combined in the expression which has found a home in all modern tongues west of the Adriatic and the Baltic.

AN AUSTRALIAN BISMUTH MINE.

DR. J. R. M. ROBERTSON, who left Australia in October last year, on February 16 read a paper on "Bismuth and Tin in Australia," before the Geological Society of Glasgow. It has been published in the *North British Daily Mail*. What he tells of Australian bismuth is of some interest. The North-Eastern district of New South Wales is called "New England." The backbone of the country is of granite, which is replaced on the Northern or Queensland border by felsites and transmuted rocks. At the irregular line of junction some claims were recently taken up for the purpose of prospecting for tin. Of this metal none was found, but the quartz veins disclosed a variable quantity of coarse gold and an unknown mineral, which the Government chemist pronounced to be "native bismuth." The bulk of the bismuth of commerce is a bye-product obtained in the treatment of zinc, cobalt, and silver ores, with which it is associated. The principal sources of the metal are Saxony, Bolivia, and Mexico.

Some native metal has been obtained from Bolivia, and in smaller quantities from Cornwall and South Australia, but until the discovery of these new mines it was a mineral curiosity.

The entire sale of bismuth has for years been monopolised by a few London brokers, known as the "Bismuth Ring," a close and conservative institution formed for the purpose of controlling the supply and price of bismuth, from whom, says Dr. Robertson, it is impossible to extract any information as to the source of the metal, its occurrence, or the resources of the mines. Under the tender mercies of this admirable institution, the original opinions held by the Australian prospectors became considerably modified.

Dr. Robertson described carefully the geological features of the place where the bismuth is found, and the various forms in which it occurs:—(1) Native metal in irregular bunches or nests throughout the substance of the quartz, the masses weighing from $\frac{1}{2}$ lb. to 50 lbs.; (2) as oxide forming 30 to 50 per cent. of the soft casing of the quartz veins; (3) in characteristic leaden-grey acicular crystals of sulphuret, though in smaller quantities.

In nearly all the lodes large quantities of molybdenite occur, indeed this mineral seems always to accompany the bismuth. At present it is thrown aside as worthless.

Dr. Robertson went on to say:—

When the London agent of the mining company owning the bismuth deposits mooted the fact that he was about to receive a consignment of several tons of bismuth in large pieces his statement was ridiculed; but on the arrival of the metal the "Ring" became alarmed. Failing to obtain the mine upon their own terms they resolved not to purchase the ores, or to purchase them at their own price, and by these means, either to quash the company or to retain the enormous profits which they had contrived to extract from consumers of the metal, such as manufacturers of bismuth subnitrate as a medicine, or cosmetic preparations in one or other of their many forms. For these, and to a lesser extent for type-founding purposes, the world's demands are at present satisfied by an annual production of 70 tons or so.

So pure is the produce of the mine under review that I have been informed by those who have had extensive experiments made, that a charge of 15*l.* per ton will amply repay the smelter for his trouble. Yet that useful public institution—I mean the "Bismuth Ring"—offers a price for the ore that will leave them the trifling profit of about 450*l.* per ton. So far as I can learn, this is the only mine of bismuth in the world. Nowhere else is the metal found in the same condition, or to the same extent, or where it can be raised with the same facility and at the same small expense. The lodes already exposed could, with a small expenditure on wages only, produce sufficient ore to supply all present demands, and at a price which at the present low market value of bismuth—6*s.* 8*d.* per lb.—would leave a profit of from 500*l.* to 600*l.* per ton, or a gross profit which would more than pay the total cost of the mines in six months! It is a novel occupation, however, and because of its novelty is correspondingly avoided by those directly interested in metalliferous pursuits. Were it not for its intense novelty, and the trifling quantity of capital required, one might suggest the formation of a "Bismuth Ring" for the "Second City of the Empire," to divide with London the enormous profits accruing from the mining, manufacture, and sale of bismuth.

MELBOURNE, VICTORIA.

IN my last letter I promised to give you some account of the operation of

THE TARIFF

In this colony, but as the whole question is now being dealt with by the Government, it will, perhaps, be well for me to defer going further into the matter until the report of the Royal Commission is made public. The Commission have had a series of questions printed and forwarded to every chemist and druggist in the colony. The questions embrace a number of subjects, and apply both to manufacturers and importers. It is proposed to hand over the report to a committee of the Pharmaceutical Society, who will tabulate the whole of the recommendations. Mr. William Bowen, the president of the Society, has already been appointed to be examined before the Commission, and a general impression prevails that the recommendation of the committee should be in favour of

INTERCOLONIAL FREE TRADE

And uniformity of duties with all Australasian colonies; there are at present some glaring inconsistencies in the tariff which badly need alteration.

Since my last communication I am glad to be able to notice the return to Parliament of

MR. C. R. BLACKETT,

A well-known chemist in Melbourne. For the last quarter of a century Mr. Blackett has always taken the greatest interest in the advancement of pharmacy in Australia.

He was President of the Pharmaceutical Society of Victoria for three years, and his name will be found associated with most of the principal events in pharmacy in the colony.

Another event I have to notice with regret is an accident which befell

MR. ALFRED FELTON,

Of the well-known firm of Felton, Grimwade & Co. Mr. Felton was returning overland from Sydney to Melbourne by railway, and while seated in a smoking car it is supposed that his foot must have projected some distance over the side of the car, for it was struck by some obstacle, and he sustained a compound fracture of the leg. He was taken to the nearest town (Goulburn), and is now in a fair way to recover, although it is expected he will not be about for some months.

Evidence of the general condition of

PROSPERITY IN THE COLONY

At the present time comes from all sides. The annual table of gold and specie exported during the year just ended shows that the value was 4,735,429*l.* against 3,887,534*l.* in 1880, a most satisfactory increase.

The general prosperity and abundance of employment has had the effect of making

CHEMISTS' ASSISTANTS VERY SCARCE,

And it is no uncommon thing to find four or five advertisements in the daily papers for assistants; this scarcity may be partly accounted for by the fact that the apprentices who have gone into the business since the Pharmacy Act was passed in 1876 are only just becoming available when their indentures expire and they pass the necessary examinations.

There are about 180 persons who are at present serving (having served since 1876) their apprenticeship, and during the next year many of these will no doubt be available, but when it is remembered that the other colonies are always in the market for well-trained assistants, and those who have been trained in Victoria are eagerly sought after, it will be readily understood why they are so scarce.

So steady, competent men who have passed their examinations at home

VICTORIA OFFERS AN EXCELLENT OPENING,

And the few who have arrived during the last year or two are all doing well.

SYDNEY

Continually persists in ruining itself by blind adherence to a free-trade policy, but by an odd perversity, instead of letting it in ruin, its policy makes it more prosperous every day.

The commercial returns for the port show that during the year its imports increased 26 per cent. and its exports 11 per cent., the increase on both accounts amounting to over 4,000,000*l.* sterling. This does not reckon the trade to the outports, nor the trade through the port of Melbourne. "We have never before," writes a Sydney correspondent, "produced so much wealth nor spent so freely." All this is quite opposed to the theories of our protectionists, according to which Sydney ought to have been reduced to beggary and bankruptcy long ago. There is evidently a law somewhere, either in the arguments or in the facts, and nobody disputes the latter.

From a Sydney correspondent we learn that Mr. E. Prosser (Messrs. Kempthorne, Prosser & Co, Dunedin) has

PURCHASED THE WHOLESALE BUSINESS

Messrs. Tayler & Co., who some months ago failed for a large amount. Since the failure the business has been carried on by Messrs. Reid & Co., from whom Mr. Prosser has purchased. Our correspondent adds that healthy competition amongst the wholesale drug houses in New South Wales is much needed.

At the last meeting of the Council of

THE PHARMACEUTICAL SOCIETY OF VICTORIA

The annual report and balance-sheet for the past year was read.

The report shows that the Society has been in existence for 25 years—a long period in the history of so young a colony. It is gratifying to find the steady and substantial success the Society has made during the last few years of its existence, and the diploma of the Society must be highly appreciated when we find at the meeting no less than fifteen new members nominated, many of whom are residents in the neighbouring colonies.

One of the most

UNACCOUNTABLE OF LEGAL DECISIONS

was given by the St. Kilda bench on January 9 in the trial of a chemist arising out of the suicide of the Rev. A. F. Harding.

At the inquest previously held Mr. J. W. Thwaites, chemist, being interrogated, had admitted to the coroner that he had sold chloral to the deceased clergyman without a witness being present, and entering the sale in a book as required by law. He (the chemist) was therefore prosecuted by the police for having failed to comply with the Sale and Use of Poisons Act, 1876. At the trial he was represented by counsel, and the police, who had expected him to plead guilty, asked for an adjournment to get up the case. The magistrates, however, decided to hear as much of the case as was ready. There was no dispute about the sale, nor as to the omission of the formalities required, but Mr. Keogh, one of the magistrates, remarked that the bottle which had been produced must have contained, not chloral, which was a solid substance, but a preparation thereof, and by the Act there was no necessity to enter the sale of a preparation of chloral in a book. "Chloral hydrate," he added, "is one thing, but a preparation of such a drug is another. The Act does not require the entry of the latter." Another magistrate said such an objection might be raised, and the Bench could decide whether such an objection were valid. From further evidence it appeared that the solution supplied contained 90 grains of chloral, and the rest water. After some discussion the magistrates decided to remand the case for seven days, whereupon Mr. Gillott, the counsel for the defendant, said he and his client would rather plead guilty and throw themselves on the mercy of the Bench than be put to the trouble of coming to the court again, which would be a worse punishment than the Bench were likely to inflict. He admitted his client had sold the article named. The sale was effected, however, with no intention of fraud or desire to evade the law. It had been after due inquiry that the preparation had been dispensed. No entry had been made nor any signature obtained. They had sold the preparation in the usual way.

Mr. Keogh: Yes; and you have a perfect right to do so.

After some consultation, the Mayor said that, although the defendant had admitted the offence, a majority of the Bench thought there was no case against him. They therefore dismissed the summons.

An appeal to the Supreme Court is probable.

THE CHEMICAL SOCIETY.]

March 2.

PROFESSOR ROSCOE, President, in the chair.

The following papers were read:—

"On the Action of Aldehydes on Phenanthraquinone in Presence of Ammonia" (third notice), by F. R. Japp and F. W. Streatfeild. With aldehydes of the benzene series and furfuraldehyde, compounds belonging to the class of substances obtained by Ladenburg (Ber. 9, 1524) were obtained; with hydroxyaldehydes of the benzene series, compounds of the character of the anhydroses described by Hübner were formed; with the methylether of salicylaldehyde, a mixture of both the above bodies is obtained. The authors conclude that the above reactions are most readily accounted for on the assumption that phenanthraquinone has the peroxide constitution ascribed to it by Gräbe.

"Application of the Aldehyde and Ammonia Reaction in Determining the Constitution of Quinones," by F. R. Japp and F. W. Streatfeild. The authors state that the occurrence of this reaction and the formation of compounds resembling those above described may be taken as a proof of the ortho position in quinones.

"On the Solubility of Glass in Certain Reagents," by R. Cowper. The author has determined the quantity of matter dissolved out of glass by ammonium sulphide and ammonium hydrate; dilute solutions have more action than the concentrated reagents.

"Analysis of a Piece of Oxidised Iron from the Condenser of H.M.S. *Spartan*," by R. Cowper. This contained no metallic iron, but 42.33 per cent. of ferrous oxide, 2.21 per cent. of ferric oxide, 5.24 per cent. of phosphoric acid, 2 per cent. of chlorine, and 16.71 per cent. of water. Under ordinary circumstances iron rust is chiefly composed of ferric oxide.

"On the Action of Sodium, Hydrate and Carbonate on Felspars and Wollastonite," by W. Flight. The hydrate acts powerfully as a solvent, but the strongest solutions of the carbonate have but little action.

"On the Preparation of Pure Nitrogen," by W. Flight. The author finds that ferrous oxide freshly precipitated by adding caustic potash to ferrous sulphate solution completely deprives ordinary air of oxygen; potassium pyrogallate, and other reagents do not remove the last traces of oxygen.

"Some Observations on the Luminous Incomplete Combustion of Ether and other Organic Substances," by W. H. Perkin. When, in the dark, a jet of ether is blown from a wash-bottle on to an iron plate at a dull red heat, a lambent blue flame is observed, the temperature of which is so low that it does not char paper; a similar flame is seen when a heated iron ball is suspended over a dish of ether. Sir H. Davy, Doebereiner, and Bontigny have noticed this phenomenon. Spermaceti, when melted over a hot iron ball, shows a similar phenomenon. Paraffin, alcohol, &c., also give a blue flame when heated as above.

February 16.

PROFESSOR ROSCOE, President, in the chair.

During the evening it was announced that the Council proposed Dr. Gilbert as the President for the coming year, Dr. Schunck and Mr. Griers as Vice-Presidents, and Drs. Atkinson and Japp, Captain Abney, and Mr. O'Sullivan as members of Council, instead of Dr. Tidy and Messrs. Carteghe, Roberts, and Warington.

The following papers were read:—

"On Benzylphenol and its Derivatives," Part II., by E. Rennie. The author has obtained and studied the following derivatives:—Benzylphenol sulphonic acid, mononitrobenzylphenol, amidobenzylphenol, dinitrobenzylphenol, nitrobenzylphenol. The same nitrobenzylphenol is obtained whether nitric acid acts on the potassium bromosulphonate or bromine acts on the potassium nitrosulphonate. The formulæ of these substances must therefore be symmetrical. Benzylphenol is therefore a para-derivative. The author quotes other evidence in support of this view.

"On the Buxton Thermal Water," by J. C. Thresh. The author has made a most complete analysis of this water, and gives full details as to the method employed.

"On Retrograde Phosphates," by F. J. Lloyd. It has been long known that in some superphosphates the percentage of soluble phosphate originally present gradually decreases. The phosphate which has become insoluble is termed "retrograde phosphate." The author has compared the different solutions recommended by Fresenius, Petermann, &c. for extracting these phosphates. He concludes that a cold ammoniacal solution of ammonium citrate containing 30 per cent. of citric acid is the most suitable solvent.

"Contributions to the Knowledge of the Composition of Alloys and Metal-work, for the most part Ancient," by W. Flight. This paper contains analyses of some copper nickel coins of Bactria; some coins of ancient India, about 500 B.C., containing silver, copper, lead, &c.; a figure of Buddha containing 4 per cent. of silver-chloride; "Bidrai" ware and "Kaft Gari" work from India; some iron and bronze implements from the Great Pyramid; copper spear-heads from Cyprus; a Hebrew shekel, various old Roman bronzes, &c.

"On the Dissociation of Chlorine," by A. P. Smith and W. B. Lowe. The authors consider that their experiments prove that 1 gramme of chlorine at 6° C. becomes 0.744 grammes of chlorine at 1,030° C.



OTTO GAS-ENGINES.

OTTO & LINFORD.

INTERESTING QUESTIONS IN PATENT LAW.

IN the Court of Appeal, after four days' trial, the Master of the Rolls, Lord Justice Brett, and Lord Justice Holker, delivered elaborate judgments in favour of the plaintiffs in an appeal from Vice-Chancellor Bacon, who had dismissed with costs an action for infringement of the patent for Otto's silent gas-engines. The ground for the dismissal was that the patent was anticipated and the subject matter of it published to the world in the specification of another patentee. We give an abstract of the judgment of the Master of the Rolls, which covers every point.

He said: The first thing was to gain a general idea of what the invention consisted in.

The inventor says in his specification, "In gas-motor engines, as at present constructed, an explosive mixture of combustible gas and air is introduced into the engine-cylinder, where it is ignited, resulting in sudden expansion of the gases and development of heat, a great portion of which is lost by absorption unless special provisions are made for allowing the gas to expand very rapidly. According to the present invention, combustible gas or vapour is introduced into the cylinder, together with air or other gas, in such a manner that the particles of the combustible gas are isolated in the air or other gas, so that on ignition, instead of exploding, the flame will be communicated gradually from one combustible particle to another, effecting a gradual development of heat and expansion, which will enable the power so produced to be utilised in the most effective manner." He describes three machines, which he calls modifications 1, 2, and 3, which will effect the objects; and claims (No. 1) a principle with a mode of carrying out, the principle being the putting a cushion of air between the explosive mixture and the piston, which will produce gradual combustion, save the heat, and make the machine more effective. The only other claim relates to the third modification. It claims "compressing by one instroke of the piston a charge of combustible and incombustible fluid drawn into the cylinder by its previous outstroke, so that the compressed charge, when ignited, propels the piston during the next outstroke, and the products, after combustion, are expelled by the next instroke, substantially as herein described." That is a claim for the application of the cushion of air, adding to it the compression. The compression was old, but he claims the combination of compression with his system of introducing air, to make a gradual expansion or increase of pressure.

Was that a new and improved thing? I have heard judges say that there should be a benevolent interpretation of specifications, that is, when the judges are convinced that there is a genuine, great, and important invention, they are not to be astute to find defects in the specifications; but, if possible, to put such a construction on the patent as will support it. There is, and ought to be, a bias in favour of the real improvement. Sir Frederick Bramwell says that "up to 1876" there were defects in gas-motor engines of such importance that doing away with them would be "a very great step in advance—a step which made the gas-engine from a thing very little used into what has been used very largely. It made the whole difference." Mr. Imray says the only practical attempts to use the combustion of gas as a motive-power were about 1861 and 1865, when engines were made to work by the explosion of a gaseous mixture; but these had very serious defects. The expenditure of gas was very great in proportion to the power obtained, and the engine altogether was inconvenient and troublesome. Up to 1876 he never heard of a practically useful engine. On the other

bal, Mr. May does not contradict this evidence, and, I assume, cannot contradict it, and Mr. Gardner does not contradict it. Therefore the evidence is wholly on one side that we are dealing with an invention of great merit and importance.

The first objection is that this is not the subject matter of a patent; because what is claimed is a principle, not a machine, *i.e.*, the "idea" of putting a cushion of air between the explosive mixture and the piston of the gas-motor engine, so as to regulate, detain, or make gradual what would otherwise be a sudden explosion. That could not be patented. This is the idea the patentee wishes to carry out; but he describes three machines which will carry it out; and he claims to carry it out by substantially one or another of these machines. That is the subject of a patent. If you have a new principle, or a new idea, and show a mode of carrying that into practice, you may patent that; though you could not patent the idea alone, and very likely could not patent the machine alone, because the machine alone would not be new. One of the strongest illustrations that I know of is the patent for the hot blast in the iron manufacture, where there was nothing new at all except the idea that the application of hot air instead of cold air to the mixture of iron ore and fuel would produce most remarkable results in the shape of economy. The inventor or discover of that could not patent it; but he said, "I will patent that idea in combination with the mode of carrying it out—that is, I tell you you may heat your air in a closed vessel, a machine of any shape, next your furnace, and then that will effect the object;" and it was held that that would do, and that nobody could use the hot blast during the period of that patent. Here is a complicated machine. Nobody says that this machine has been seen before, but what they do say is that, given the state of knowledge as regards mechanics, you do not want much invention to find out this machine when you are told what the idea is. Therefore, we have a principle and a mode of carrying it out, and that is a good subject for a patent.

The next are objections of insufficiency of specification. They are both classes of objection which are quite familiar to those who have had to do with patent cases, and are always remarkable in this way, that they are never found out until the action is brought. The workman always makes the machine, and the machines are made in hundreds in thousands, and nobody finds them out. But you find them out when you come to study the specification, and then to study the machine. In these matters it is not for you to find how not to do it, but when the drawing does not work exactly, the workman sets himself at once to see how it ought to be done. There are four such errors in this specification. The witnesses for the plaintiff say that an ordinary workman would find out and rectify them. The witness for the defence does not say that the workman would not find out each one, but he thinks it is too much to expect him to correct all four.

He does not say that he has ever tried a workman, or that he has heard of one who failed. It seems to me that that is exactly the class of objection which ought not to prevail, and, according to my experience, never has prevailed.

I now come to an objection of a far more serious kind. It is said the specification does not show the proportion of air to the combustible mixture. The answer is, first of all, no exact proportion is wanted. Upon that I think the evidence is clear, but it is equally clear that a mere film of air will not do. You must have a considerable quantity. Now these words, "considerable quantity," are not in the specification; and the question is whether the specification tells a person about to use the machine that there must be this quantity. I think it does. A specification for improvement in gas-motor engines is addressed to gas-motor engine makers and workers, not to the public outside. Consequently, you do not require the minute information that you would in a totally new invention. The inventor says: "I turn a sudden explosion of gas into a gradual explosion, and do that by the introduction of a cushion of air between the piston and the combustible mixture." If a man is left without any more information he asks, "How much air am I to let in?" He lets in a little, and he finds that the thing explodes as before; he lets in more, and he finds, on the mere regulation of his stop-cock, how much is required.

That requires no invention. It requires a little care and watching, and that is all. When you look at the specification, the drawings, with the letterpress, show that he really puts in nearly as much air as explosive mixture.

It seems to me there is sufficient in this specification to tell the maker of the engine, without requiring him to use an inventive faculty, how to make the engine, and in what proportion to let the air in.

Two minor objections were also overruled.

The Master of the Rolls went on to say: The next objection is that there was no evidence of utility. It is quite true that it is *prima-facie* evidence of want of utility if you do not make and vend your machine, but that is subject to this observation, that you may make and vend an improvement; and if you find, immediately after you patent your invention, that it can be improved, it does not by any means show that the first invention was useless.

In this case the inventor has patented three modifications, and what he has used, made, and sold have been almost entirely No. 3's, and the other things sold have been almost entirely improvements on No. 1. No. 1 itself does not appear ever to have been sold, but then they prove that No. 1 will work. Therefore there is evidence of utility.

That disposes of every material objection, except the most important ones of novelty and infringement.

As regards novelty, that was the one upon which the defendant succeeded in the Court below, and it turns upon this.

The defendants say that in the specification of one Johnson (a communication from Lenoir), 16 years before the patent, there was a description of the present invention. Lenoir, the inventor and communicator, is a great maker of gas motor-engines, and it seems that a very large number of his engines were made and sold and publicly exhibited; and if this invention of the patent had been proved, it is very remarkable that they could not produce a witness who has either made, or sold, or seen in work an engine made according to the plaintiff's patent. That is strong evidence to my mind that Johnson's specification did not disclose the plaintiff's patent. Of course that is not conclusive; the specification itself must be considered by the Court like any other document. I have arrived at this conclusion—that, so far from pointing out the principle or idea published by the plaintiff, the machine described in Johnson's specification is worked by the sudden explosion of an inflammable mixture; and that, so far from telling the public that you can make the machine to work by gradual expansion by the protection of a cushion, the only reason for which air is introduced into this machine is with a view of making more sudden the expansion of the gases. If that is so, there is no description of the plaintiff's invention, but of something entirely different.

I now come to the last point, which is that of infringement. The defendants' machine is a double-action machine, or, rather, a machine with two pistons, and works in rather a different way—there are six motions to four motions. But does it or does it not adopt the plaintiff's idea with a substantially similar mode of carrying it out? I think it does. The defendants' machine works in this way:—There is a cushion of air, as described by the plaintiff, next the piston; there is the combustible mixture next, then more combustible mixture, another stratum of air, and another piston on the other side; you light it in the middle. The only difference is that it has a double action. The action is exactly the same—the explosion is modified in exactly the same way; and though, as you have doubled your piston, you have to alter a little your cams and eccentrics and slides, that is exactly what is meant by being "substantially the same."

Here, again, the evidence on the part of the plaintiff wholly preponderates. Their engineers are quite positive that there is no difference, and the defendants' engineer really does not contradict them. I think, therefore, the infringement is made out, and the result will be that the decree of the Vice-Chancellor will be reversed, and the plaintiff will have his injunction with costs.

Lord Justice Brett and Lord Justice Holker concurred.

The plaintiffs received costs, damages, and leave to apply to the judge who originally tried the action for a certificate that the validity of the patent came into question, and that the plaintiff proved his breaches.

RETURNED GOODS.—TIDMAN & CO. v. COLDWELL.

On February 20 this case was heard in the County Court, Old Street, City Road. Plaintiffs are druggists' sundriesmen, defendant is a chemist carrying on business at Sussex Street, Pimlico, with a branch shop in the City Road. The amount sued for was 14s. 9d., the balance of two accounts.

On the first account 2s. 6d. was claimed for a case, allowed for, but, according to the plaintiffs, not returned. Defendant swore that it had been returned. A document was produced, in which 2s. 6d. was deducted from an amount due, and a receipt given for the whole. Below the receiver's signature was a note, "Case to return," meaning that the case was to be returned subsequently. The judge held that this receipt barred all further claim. It was a foolish thing to give a receipt for a thing not yet received. It would be just as wise to give a receipt for an account "payable hereafter."

The second amount, 12s. 3d., was claimed for goods sold and delivered last September. Defendant swore that the traveller had "done" him over a previous account. He had promised to take off 10 per cent. discount, but calling while defendant was out his assistant paid the account, and was allowed only 5 per cent. When complaint was made the traveller said, "Oh, give me another order, and I will take it off that." Defendant said, "No, I will give you no more orders; your firm shall not supply me again." After this, or, as the traveller swore, after being told by the Pimlico manager that each manager bought for himself, he went to the City Road shop. He told the manager that he had been sent for an order (according to defendant) or that the managers were authorised to buy for their shops (as plaintiffs swore), and booked an order for goods, value 12s. 3d., which were delivered and signed for. Mr. Coldwell found the goods had come, and ordered them to be sent back at once. This was done next day. Plaintiffs' price-list was put in, which said that mistakes could not be rectified after more than seven days. Messrs. Tidman & Co. sent the goods back to the shop by a messenger, who left them on the counter. Mr. Coldwell then took them back himself, accompanied by his errand-boy, who proved returning them the first time. After that the goods were sent backwards and forwards an uncertain number of times. The judge remarked that bandying the goods backwards and forwards like a shuttlecock in a game was thorough tomfoolery. It proved nothing at all. If it were promptly done, a man had a perfect right to return goods if they were not satisfactory, or if he had changed his mind. All that could be done was to sue for damages resulting from breach of contract. If the goods were left with Mr. Coldwell it was his duty to give notice that they were lying at the owner's risk, to put them somewhere, and care nothing more about them. If they were left with Mr. Tidman, he might do the same, but as his was a warehouse, it was his duty to sell them for what he could get, and sue the defendant for any loss. Judgment for the defendant, with costs.

RIVAL TEACHERS.

In the Queen's Bench Division of the High Court of Justice on February 16, before Mr. Justice Lopes and a common jury, Dr. Belville, M.A., of Dublin University, sued Messrs. Wills & Wootton, proprietors of the Westminster College of Chemistry and Pharmacy, by whom he was employed in 1877, to recover a sum of money as compensation for preparing a Latin grammar for the defendants, and also damages for libel.

Mr. Chapman appeared for the plaintiff, and Mr. Morgan Howard, Q.C., and Mr. Masterman for the defendants.

The case for the plaintiff was that in 1879 the defendants proposed that he should write for them an abstract of the Latin grammar, with exercises, for the sum of 20l.; and that in 1880 this work was enlarged into writing a Latin grammar itself. In October, 1880, the defendants dismissed the plaintiff from their employment, and subsequently they published in the *Pharmaceutical Journal* an advertisement as to the holding of their classes, in which they said:—

"N.B.—Dr. Henry Belville has no more connection with Messrs. Wills & Wootton. We anticipate no failures in future."

This was the libel complained of, and the plaintiff stated that in consequence of it he had lost his pupils, and had been ridiculed and insulted in the streets.

Upon the conclusion of the plaintiff's examination, the counsel had an interview with his Lordship, and terms of settlement were agreed upon.

Mr. M. Howard said he was sorry that the alleged libel had been taken by the plaintiff in a sense that was not intended.

A verdict was taken by consent for the plaintiff for 100l., subject to certain terms which had been agreed upon.

BRANCH SHOPS.

At the Carmarthen Borough Police Court on February 20 before the Mayor and Alderman Thomas Thomas, Mr. George R. Templeman, of Birmingham, assistant secretary of the Chemists and Druggists' Trade Association of Great Britain, charged Roland Phillips, of Dark Gate, with selling a certain poison, to wit, oxalic acid, without the address of the seller on the label of the packet. Mr. Henry Glaisyer, solicitor, of Birmingham, prosecuted, and Mr. T. Davies, Carmarthen, defended.

Mr. Templeman said that on the previous Wednesday he went into the shop at 2 Dark Gate, where he saw the defendant, and purchased of him an ounce of oxalic acid in a packet, which he produced, and which was labelled "Oxalic acid—poison. W. E. Jones, dispensing chemist, 2 Dark Gate, Carmarthen." He had tested the contents of the packet, and found them to be oxalic acid. The name, "W. E. Jones," appeared over the door of the shop.

Mr. John Evans, rate collector for the borough of Carmarthen, was called, and produced his books, in which he stated was the name of Roland Phillips, rated as the occupier of 2 Dark Gate. Defendant paid him the rates.

Cross-examined by Mr. Davies: I do not know of my own knowledge who the occupier is. I have lately made inquiries, and I find that Mr. Phillips is not the tenant. I rated the defendant in error. I took him for the occupier, but have since found that he is not.

To Mr. Glaisyer: I believe Mr. Jones is the occupier. He lives in London and here.

Mr. T. Davies, in defence, called the attention of the bench to the words of the section which said that the person on whose behalf the sale of such poisons was made by a servant or apprentice shall be deemed the seller. He was prepared to admit the sale, but would also prove that the defendant was as much a servant as the boy who was in the shop.

The Mayor said that the earlier words of the 17th section enacted that poisons should not be sold to any person "unknown to the seller," unless introduced by a person known to the seller.

After some further remarks, Mr. Davies called

Mr. W. E. Jones, who said he carried on business at Dalston, and at 2 Dark Gate, Carmarthen. He used to reside at Carmarthen. It was rather over three years since he had been in business at London. Roland Phillips had been in his employ over nine years, and was his assistant at Dark Gate. Witness was the owner of everything in the shop at Dark Gate. Phillips accounted to him every week, and made payments in connection with the business. Witness paid him a fixed salary, quite independent of profit and loss. Phillips paid all moneys in hand into the National Provincial Bank at Carmarthen every week. Witness was the tenant, and paid the rental and income-tax in respect of the profits at Dark Gate. Mr. Thomas Morris, Coomb, was the owner of the house. Defendant had no right to sell any article there for his own benefit.

Cross-examined: He had been at Carmarthen about three times in the three years he had been in London. Defendant Phillips is not a qualified chemist. He had been in witness's employment about nine years. Was previously a grocer's assistant. He kept several different kinds of poison in stock; he could not say for certain if he had strychnine, prussic acid, or aconite, but admitted to keeping arsenic and corrosive sublimate, together with several others contained in first part of the schedule. He had not examined his stock since the last time he was in Carmarthen, 18 months ago, so could not say for certain what he had in stock. The sale of such poisons as are in stock is conducted by the defendant. He was not present when such poisons were sold. He believed his address on the Register of Chemists and Druggists was Dalston and Carmarthen.

Glaisyer (referring to Register): I only find W. E. Dalston Lane, London. I presume that refers to —Yes.

For some half-hour's private consultation with his Judge,

The Mayor said the bench had had some little difficulty arriving at a proper decision in the case. But reading latter part of the 17th section of the Act, upon which Davies had laid so much stress, by the light of the section the bench concluded that the "seller" must be the person called upon to conform to the regulations of the Act. As regards the case at Oxford, which Mr. Davies had referred to, they took it that the definition of a seller which was given by Justice Grove on the hearing of the appeal was wide enough to meet the present case. Justice Grove said: "I am of opinion that the seller means the person who actually conducted the business of the sale." They had had Mr. Jones's evidence that day that Phillips ordered and paid for them himself. In the Oxford case it was that Patterson, the chemist, was not the seller, for he was in another place, and could not conform to the Act. A person living at a distance could not do so. Mr. Justice's decision held in the same case that the seller meant the person who occupied the shop. There was no doubt that Phillips really had the control of the shop. The bench, therefore, decided that he must pay a fine of 10s. and costs. Mr. Glaisyer asked for extra costs, as Mr. Jones had had benefit of the Oxford case and of the recent case in London before his Worship.

The Mayor said those cases were not the same. He thought the prosecution would be satisfied with the conclusion.

Mr. Glaisyer did not press the point, and the proceedings, which had elicited much interest in the court and town, terminated.

BANKRUPTCIES AND LIQUIDATIONS.

A. S. BROWN.

On February 10 a meeting of the creditors of Mr. A. S. Brown, chemist, was held at the Dolphin Hotel, Doncaster. The statement showed liabilities amounting to 295*l.* 10*s.* 10*d.*, and assets 38*l.* 5*s.* A composition of 2*s.* in the pound was accepted, payable in six months.

HARRISON & YOUNG, Manufacturing Chemists, West Ham. An adjudication in this case was made in January, 1880, liabilities being returned at 2,474*l.* 15*s.* 8*d.*, against assets 952*l.* 19*s.* 10*d.*; and application was made to the Court on February 16 by the bankrupt Harrison for his order of discharge, in pursuance of a special resolution of the creditors, attributing his bankruptcy and failure to pay 10*s.* in the pound to circumstances for which he could not justly be held responsible. Mr. Registrar Brougham granted the application.

MARKER & SON, Manufacturing Chemists, 181 Wardour Street, W.

The debtors, late of 9 Bucknall Street, St. Giles', methylated spirit manufacturers, and now carrying on the business of manufacturing chemists, as above, under the firm of Messrs. Rea & Co., have filed a petition for liquidation, their affairs were brought before Mr. Registrar Murray on the 1st inst. Mr. Clark (Noon & Clark) applied for the appointment of Mr. G. C. Boor, of Artillery Lane, as liquidator, and for the usual restraining order. The debts were about 2,500*l.*, and the assets 500*l.* Mr. Registrar Murray made the appointment, and granted an injunction. Creditors secured and unsecured:—

	£	s.	d.
Rowman & Duncan, Liverpool	655	4	11
Boor, George, & Co., Artillery Lane	600	0	0
Owen, R. W., 6 New Inn, W.C.	491	0	0
Capital and Counties Bank	250	0	0
Wakebread & Co., Bethnal Green	63	15	3
Clark, G. F. H., & Co., Bury Street, E.C.	40	0	0
Box & Co., Sherborne Lane	30	0	0
Freere & Trehearne, Lincoln's Inn Fields	30	0	0
Hiles, H., 146 Fleet Street	19	5	0

	£	s.	d.
Godson & Co., 23 Bevis Marks	16	8	11
Gornman, —, Havelock Terrace, Battersea	14	0	0
Holland & Day, Crutched Friars	11	19	4
McGlashan & Co., Drury Lane	13	12	11
Noakes & Co., Spa Road	17	6	0
Trinder, Thomas, jun., St. John's Wood	23	0	0
Trinder, Louisa, St. John's Wood	18	0	0
Wormersley & Co., Chickensand Street, E.	24	16	6
Young & Son, Cranbourne Street, W.C.	15	16	6

The first meeting is to be held on the 20th inst., at 3 o'clock, at the office of Messrs. Noon & Clark, 16 Bloomfield Street, E.C.

A. C. WILLIAMS, Homœopathic Chemist, Imperial Buildings, Ludgate Circus.

THE bankrupt, described also as of Nunhead Lane, Peckham Rye, and Loampit Vale, Lewisham, medical electrician, scrivener, and money lender, was adjudicated on January 27 upon the petition of Mr. D. H. Gaston, of Lewisham; and the first meeting in the bankruptcy took place on February 15 before Mr. Registrar Hazlitt. The accounts showed:—Unsecured debts, 1,744*l.* 1*s.* 7*d.*; debts partly secured, 1,620*l.* (value of security 525*l.*), and preferential claims, 45*l.* 6*s.*; total amount unsecured, 2,833*l.* 7*s.* 7*d.* Assets, book debts 50*l.*, estimated to produce 20*l.* The following appeared as creditors:—

	£	s.	d.
Bodger, G., 49 Philpot Street, E.	100	0	0
Boor, J., 2 Cavendish Retreat, S.W.	40	0	0
Dyson & Co., Furnival's Inn	12	0	0
Gurney & Co., Albert Road, Peckham	10	6	0
Gaston, D. H., Lewisham	500	0	0
Fuller, G., Philip Road, Peckham Rye	100	0	0
Houston, J., Castle Douglas, N.B.	200	0	0
Kenett, P. B., 59 Stockwell Park Road	25	0	0
Morant, J. H., Natal	500	0	0
Moret, J., 21 New James Street, S.E.	30	0	0
Parnell, R., 216 Westminster Bridge Road	17	0	0
Rose, H. H., Streatham	50	0	0
Sear, E., Rye Lane, Peckham	55	0	0
Sulhvan, L., 82 Faraday Street, S.E.	50	0	0
Wright, Layman & Umney, Southwark Street	10	11	3

Creditors Partly Secured.

	£	s.	d.
Alexander, John, Westbourne Park	150	0	0
Baker, R. W., 2 Tufnell Road, N.	200	0	0
Corner, E. H., Lewisham Park	95	0	0
Harris, J., 98 Hill Street, Peckham	300	0	0
Hervey, O. B., 3 Westbury Road, W.	100	0	0
Smith, T. W., 27 St. Stephen's Road	45	0	0
Tomkins, H. F., Balham	450	0	0
Tippett, H. J., 14 Mosedale Road, S.E.	100	0	0
Wilson, J., 4 Worcester Street, St. George's Square	189	0	0

Proofs of debt amounting to about 1,600*l.* were admitted, and resolutions were passed for the appointment of Mr. H. H. Rose, of Kempshott Road, Streatham, trustee, together with a committee of inspection—namely, Messrs. John Alexander, John Harris, Edwin Henry Corner, and David Henry Gaston. The meeting for public examination was held on the 7th inst., before Mr. Registrar Pepys, but the bankrupt did not appear at the time appointed, and the meeting was adjourned to the 28th inst.

AN American boy came home from school very much excited, and told his father that he believed all human beings were descended from apes, which made the old man so mad that he replied angrily:—"That may be the case with you, but it ain't with me; I can tell you that, now."

KIESELGUHR IN SCOTLAND.—Large deposits of this valuable silicious material were discovered about 18 months ago near Kinnord, Deeside, by the Rev. Geo. Davidson, a microscopist. It is now placed on the market commercially. Hitherto it has been found only in Germany. It is used in the manufacture of dynamite, of some polishing powders, and of artificial ultramarine. It consists of the siliceous shells of diatoms.

CLEANING HAIR-BRUSHES.—Many handsome hair-brushes are spoiled by careless washing. Try the following plan:—Comb out the brushes, have ready a basin of warm water which has a tablespoonful of ammonia in it. With the face downwards, dip in the brush, but do not let the water touch the wood or ivory back, then rub the bristles with a little soap and wave the brush to and fro through the fluid; when cleansed, dip it into cold water; afterwards shake, rub the frame, and let the bristles dry in the air or in a warm room, but not before the fire, lest the back should warp or become unglued.—*Perfumers and Hairdressers' Gazette.*

Poisoning Cases.

ACONITE.—On March 6 an unknown man was found dead in his room at Westcott's Commercial Hotel, Old Bailey. Dr. K. Hardy, of Wardrobe Place, was called in, and said that death had probably been caused by aconite poisoning.

CARBOLIC ACID.—At the London Hospital, on Feb. 12, George Elliott, an abscess patient, committed suicide by taking carbolic acid. He induced another patient to get it for him from behind a picture.

CHLORAL HYDRATE.—On February 24, at Westminster, Emily Rawlinson was charged with attempting to commit suicide by taking Hunter's solution of chloral. She was admitted to bail.

MORPHIA.—On March 3, a medical student, C. A. Richardson, died at West Derby from the effects of an overdose of morphia.

NITRIC ACID.—On February 14 an inquest was held at University College Hospital on the body of Hannah Hemment, who died from the effects of nitric acid. She was told that it was good for toothache, and sent for some. She put the mouth of the bottle to the affected tooth, and tilted it up so high that nearly all its contents ran down her throat.

OXALIC ACID.—On February 21, at Preston, William Walsley, 17, was committed for trial on the charge of attempting to poison his master by mixing a pennyworth of oxalic acid with a quart of dinner beer. The first taste showed that the beer had been tampered with, and investigation showed that the prisoner had bought some oxalic acid when he was sent for the beer. Analysis showed that 79 grains of oxalic acid remained sticking to the bottle. —At Plymouth, on February 21, William Henry Main attempted to commit suicide by taking oxalic acid. He bought a pennyworth from Messrs. Balkwill & Elliott, which he poured out into a glass of gin, drank off at once, and fell on the floor unconscious. He recovered.

PARAFFIN.—On February 24, at the Mansion House Police Court, Agnes Currie was charged with attempting to commit suicide by drinking paraffin oil. She was discharged.

PHOSPHORUS.—On February 17, B. F. Smith (17 months) died from phosphorus poison. During the absence of his nurse for a few minutes the child sucked off and swallowed the heads of some matches. —At Newcastle, on February 24, an inquest was held on the body of Hugh Boag, who died the previous day. On February 20, while suffering from the effects of drink, he told his wife he was going to take rat-poison. She followed him into the shop of Mr. Wilkinson, late Fairs, Newgate Street, and asked the assistant, Joseph Pigg, what the deceased was buying. He said, "Three pennyworth of rat-poison." She told him not to give the rat-killer to deceased as there were neither rats or mice about the house, and deceased was the worse for drink, and intended to drink the rat-killer to poison himself. But the young man, notwithstanding what she said, handed the rat-killer in a little jar to her husband, who came out and went into a cook-shop. She stood outside the shop until he came out, and they both went home. The man afterwards told her that he had taken the poison, but she hardly believed him until he died on February 23. Joseph Pigg said the rat-killer was a compound of phosphorus and lard. The jury returned a verdict of "Suicide while in an unsound state of mind."

STRYCHNINE.—On February 13 an inquest was held at Lincoln Flats, near Selby, on the body of Mary Ann Ellingham. She was seen to throw a bottle away after putting it to her mouth, and said she had taken strychnine which she had stolen from Mr. Cayley's surgery. Mr. Cayley said he had not missed the strychnine, but deceased had been alone in his surgery about five minutes. Verdict, "Temporary insanity."

SULPHURIC ACID.—At Brighton, on February 22, an inquest was held on the body of a child named Williams (aged 5). He had drunk some spirits of vitriol kept for cleaning brasswork.

VERMIN-KILLER.—Jane Harker, the wife of an inn-keeper, at Leeds, committed suicide by taking vermin-killer. The inquest was held on February 23. —At Sittingbourne, on February 21, Mrs. Whitehead died from the effects of vermin-killer taken by mistake for magnesia. —John Allen, commercial traveller, committed suicide at Carlisle by taking vermin-killer containing strychnine. —On February 26, at Dyce, Ann Campbell died from the effects of this poison, taken two days before.

MEDICINE.—An inquest was held at Crewe on February 15 upon the body of Sarah Rook, wife of a publican. The husband had been treated by a doctor for *delirium tremens*, and his wife, who suffered from carache, took some of his medicine, which caused her death. The jury found that the deceased had been poisoned accidentally by her husband, who administered the medicine, and appended a rider strongly condemning the doctor for sending out poisonous medicine without indicating its dangerous nature.

DOGS AND HORSES.—At Bicester, on March 8, Robert Walton, drover, was charged with laying poisoned meat at Newbottle, which caused the death of several dogs. He was fined 32*l.* —Walter Johnson, farm servant, was fined 3*l.* at Driffield, on March 2, for administering a compound containing antimony to his master's horses. Three had died.

Obituary.

ASHTON.—On January 26, 1882, Mr. John Ashton, pharmaceutical chemist, Market Place, Belper. Aged 49 years.

CLEMISHAW.—On February 18, 1882, Mr. Joseph Clemishaw, chemist and druggist, Hounslow. Aged 49 years.

CROWTHER.—On February 26, William Crowther, of Field House, Gomersal, aged 65. His family had belonged to Gomersal for many generations. He was a manufacturing chemist, and took an active part in all movements intended to promote elementary education. He was one of the founders of the Gomersal Mechanics' Institute. He was for many years one of the Board of Guardians, and was a magistrate of his district.

EVANS.—On January 31, 1882, Mr. Gomer Evans, chemist and druggist, Bala. Aged 38 years.

HART.—On February 6, 1882, in the 71st year of his age, Mr. Hugh Hart, chemist and druggist, Duke Street, Dennistoun. Mr. Hart was formerly associate manager of the Glasgow Apothecaries' Company, and afterwards carried on business in Argyll Street, Glasgow. He removed to Dennistoun about seven years ago.

HOUSEMAN.—On February 15, 1882, Mr. Alfred H. Houseman, chemist and druggist, Southborough, Tunbridge Wells. Aged 38 years.

KIRTON.—On January 1, 1882, Mr. Joseph Bishop Kirton, chemist and druggist, Savile Street, Hull. Aged 64 years.

PRINCE.—On February 2, 1882, Mr. Henry Prince, pharmaceutical chemist, Fore Street, Taunton. Aged 68 years.

SLAYTER.—On February 28, 1882, Mr. George Slayter, chemist and druggist, St. Mary's Butts, Reading. Aged 73 years.

SENIOR.—On February 26, 1882, Mr. Thomas Brooke Senior, chemist and druggist, Kirkgate, Wakefield. Aged 46 years.

SLACK.—On January 23, 1882, Mr. William Slack, chemist and druggist, Cross Hills, near Keighley. Aged 66 years.

TUCKER.—On January 24, 1882, Mr. George William Tucker, chemist and druggist, Newport, Isle of Wight. Aged 67 years.

VIPOND.—On February 2, 1882, Mr. William Dickinson Vipond, chemist and druggist, Middleton-in-Teesdale. Aged 47 years.

WHITE.—On February 3, 1882, Mr. John White, chemist and druggist, Hamilton Street, Greenock. Aged 65 years.

WATTS.—On February 15, 1882, Mr. William Watts, pharmaceutical chemist, Bedford Terrace, Kensington.

WHITTAM.—On February 22, 1882, Mr. Benjamin Whittam, chemist and druggist, Burnley. Aged 49 years.

MISCELLANEOUS FORMULÆ.

HONEY WATER.—Take of—

Ol. caryoph.	2½ drachms
Ol. bergamot	1 oz. and 2 drachms
Ol. lavand. ang.	2½ drachms
Moschi	4 grains
Santal flav.	2½ oz.
Spt. rectif.	32 oz.
Aq. rosæ	8 oz.
Aq. flor. anrant.	8 oz.
Mel. opt. ang.	2 oz.

Macerate the yellow saunders and the musk in the spirit for seven days, dissolve in it the essential oils, and add the distilled waters; shake well together, and keep in a warm place. The longer it stands with occasional agitation, the more it improves. When required allow it to settle bright, and decant.—*Perfumer and Hairdresser's Gazette.*

APPLICATION FOR DIPHtheritis in FOWLS.—Hager (*Centr.*) recommends the following to be applied twice daily with a camel-hair pencil to the bill and throat of the fowls affected:—

	Parts
Pure white creasote	2
Ethyllic ether	2
Boracic acid	5
Spirit of wine	15
Crude glycerine	15
Anised water	120

M and agitate until the boracic acid is dissolved, then strain.

PLIABLE IODOFORM.—Dr. Fowler makes a pliable mass of iodoform by mixing it with isinglass and glycerine. The isinglass is reduced to a jelly by steam, and enough glycerine added to give it consistency and pliability. The proportions are as follows:—

Iodoform	3j.
Isinglass	3viii.
Glycerine	3vi.

THE following are from Mr. R. F. Fairthorne's useful Botanical Notes in the *American Journal of Pharmacy*:—

Extract of Herbs for Flavouring Soups, &c.

Savory, sweet marjoram, and basil, of each	2 oz. (troy)
Sage and black pepper, of each	½ "
Thyme	1 "
Celery-seed	1½ drachm
Alcohol	3½ pints
Water	½ pint

The ingredients are reduced to coarse powder, packed in a percolator, and 4 pints of extract obtained by percolation, until last being displaced by diluted spirit. This is recommended to add to beef tea to make it less insipid.

Extract of Vanilla.

Vanilla bean, good quality	1 cz.
Rock candy	2 "
Alcohol	9 fl. oz.
Water	7 "

Put the vanilla as small as possible, and beat it with the candy in an iron mortar. Transfer the powder to a bottle with the alcohol and macerate for 24 hours, shaking occasionally, then add the water; treat in same manner for another two days, and filter the extract.

Antiseptic Cologne.

Eau de Cologne	8 fl. oz.
Chloral hydrate	2 drachms
Quinine (alkaloid)	10 grains
Carbolic acid (pure)	30 "
Oil of lavender	20 drops

May be used as spray or on the handkerchief.

CORN CURES.—Dissolve 1 part of salicylic acid in 10 parts of collodium; apply several times a week. The corn dissolves with little trouble. For hard corns, apply at night a mixture of 1 part of carbolic acid, and 10 parts each of distilled water, glycerin, and soap liniment. Envelope with gutta-percha tissue, and the corn may generally be re-

moved the next morning. For inflamed and swollen joints, proceed in the same manner, but use, instead of the above mixture, liq. plumbi dil., 100 parts; and tinct. croci, 5 parts.

GINGER LIQUEUR.—

	Lb.
Rad. zingih.	½
S. v. r.	viii.
Aque	iii.

Percolate and distil 8 lbs. Add—

	Lbs.
Sugar	3½
Dissolved in Water	4

Pharm. Zeitung.

HONEY OF ROSES.—E. Langlet (*Repert. de Pharm.*) recommends the following process as yielding a preparation of fine red colour, and astringent taste, which will keep well:—Provence rose leaves, 100 grammes, bruise and reduce to coarse powder, macerate them for three hours in a mixture of 160 grammes of water and 20 grammes each of alcohol and ether. Press and set the liquid aside in a cool place. Then pour on the marc 600 grammes of boiling water; infuse for three hours, lightly press and clarify with white of egg. Evaporate by gentle heat to 150 grammes and add pure white honey 600 grammes. Raise to the boiling point, and at that moment add the ethereal liquor. Keep hot for a few seconds so as to ensure the volatilisation of the ether; let it cool and filter through paper.

Personalities.

MR. THOMAS PATTERSON has recently opened a new business at 49 Ribbleson Lane, Preston.

MR. H. BRUMWELL has recently opened a new pharmacy at "Medical Hall," Sutton, near St. Helens.

MR. SANDFORD WALKER has recently removed from 22 Hebrew Road to 2 Abel Street, Burnley Lanc, Burnley.

MESSRS. WALKER & DALRYMPLE, chemists' tea merchants, Whitechapel Road, have taken into partnership Mr. Henry Wilson, who has been in their service for 20 years.

MR. WILLIAM HANNAFORD has commenced business on his own account at 123 Granby Street, Princes Road, Liverpool.

MR. JOHN SMITH, late dispenser at the West Derby Union Workhouse, has recently fitted up shop and commenced business at Kingsley Road, Liverpool.

J. PEAT & Co. have succeeded to the business of Mr. Mark Cooper, at Church, near Acerington, who is retiring from business.

MR. G. F. SNOW (many years with Savory & Moore) has purchased the business carried on hitherto by Mr. T. H. Connor, at 4 Jewry Street, Winchester.

MR. ROBERT HANCOCK, chemist and druggist, Fleet Street, has appeared as a poet. An excellent set of verses from his pen, in the Tennysonian metre, has been recently published in the *Radical* newspaper.—*Printers' Register.*

MR. SKIPPER, formerly pharmaceutical chemist, of 4 Dalston Lane, has been appointed house physician to University College Hospital, to fill a vacancy occurring on May 1 next.

MR. JOHN WHITE, chemist and druggist, Greenock, who died on February 3, has left the following legacies:—To St. Andrew's Free Mission Church, 200*l.*; a private legacy of 100*l.*; to the Female Benevolent Society, 200*l.*, to the Greenock Infirmary, 200*l.* and the residue of the estate; and to the Aged and Infirm Ministers' Fund of the Free Church, 200*l.* By a codicil Mr. White directs the following legacies to be paid, should there be sufficient funds left after the foregoing and other legacies have been met:—To the Kilmun Seaside Homes, 250*l.*; to the Greenock Seamen's Friend Society, 250*l.*; to Building fund of Free St. Andrew's Church, 500*l.*; and to the Sustentation Fund of Free St. Andrew's Church, 500*l.*

Applications, prepaid, must be accompanied by receipts, either by Post-office order, payable at High Holborn, or by cheque crossed "Sir Samuel Scott, Bart., & Co., London."

On application special forms will be supplied for the statutory declaration and the certificate of character.

Clause 11 of the Act makes it a misdemeanour wilfully to attempt to procure registration by making false or fraudulent statements. In the declaration which the applicant must make he states that he has continuously practised *veterinary surgery* for five years. The meaning of the words "veterinary surgery" is clearly important. The Act defines them as "the art and science of veterinary surgery and medicine." A definition could hardly be less satisfactory, unless a wider opening for litigation. A man who has practised the art and science of veterinary medicine for five years without undertaking the responsibility of surgical operations from constitutional repulsion, might fairly claim that his practice comes within the definition of the Act. The definition does not say that veterinary surgery means the whole "of the art and science; what parts are unimportant? who is to decide? will be questions immediately raised. Mr. A. W. Hill, the courteous Secretary of the College, has informed us that the practical question is, "Has the applicant performed operations?" This, many at once say, is going beyond the Act, which takes such a limited view of veterinary surgery.

When the applicant has sent in his money, and his forms properly filled up, an acknowledgment of their receipt is at once sent him. There will then be some delay. When the time of application has expired, the list of applicants will be printed and circulated among the members of the Royal College of Veterinary Surgeons. If a member objects to any name, that application will be refused. The only appeal against the refusal is to the Privy Council, which takes quite a large proportion of veterinary surgeons, and is almost certain to support the decisions of the College. The Council of the College are not exceeding their powers, for the Act leaves them at liberty to impose what they like on applicants for registration. But they could hardly have chosen more objectionable ways of proceeding. Very objectionable is the plan of sending round the list of applicants, so that their members may raise any animosity or private spite, injure any energetic competitor not too genteel to join a trade to veterinary practice, and vilify the applicant—who is sure to become "the accused"—as a chance of producing rebutting evidence, or of convincing his accuser.

It must not be forgotten that the Act cannot touch the question of "goods supplied." It provides that unregistered persons shall be unable to recover charges for veterinary medicine or operations, but it does not and cannot prevent any man, registered or not, from suing in the County Court for the value of veterinary medicines supplied, providing no fraud can be made for advice.

A PROBABLE PATENT MEDICINE BILL.

In the House of Commons on the 1st inst. Mr. Warton, M.P., announced that on the House going into Committee of Supply he intended to direct attention to the sale of patent medicines, and to make a motion in respect thereto. The House went into Committee of Supply, but Mr. Warton did not bring forward his resolution. He informs us, however, that he has no intention of abandoning it, but will seek a favorable, though possibly not an early, opportunity of proceeding in the matter. His objects are (a) to call attention to the undue weight given to patent medicines in the popular

mind, owing to some imaginary official guarantee associated with the Government stamp; (b) to call attention to the great danger to the public arising from the poisonous nature of many patent medicines; and (c) to suggest alterations in the laws affecting the sale of patent medicines so as to meet these objections.

The trade which Mr. Warton proposes to attack is an influential and a pugnacious one. It is generally understood that the Association of Patent Medicine Proprietors dictated terms to those who prepared the Pharmacy Act of 1868, and that the exemption clause as regards patent medicines in the 16th section of that Act was the price paid for their forbearance to oppose it. At that time chemists, however, felt that their interests were in some degree associated with those of the patent medicine proprietors; now the latter must seek their allies where they have so studiously cultivated friendship. If Mr. Warton suggests reasonable proposals, he may be confident of the good will of the majority of the pharmaceutical body in this country, who have neither ethical, commercial, nor sentimental reasons for opposing any well-considered plan for regulating the sale of patent medicines, poisonous ones especially, in the public interest.

BRANCH SHOPS.

THE important prosecution by the Chemists and Druggists' Trade Association at Carmarthen presents forcibly the question of how far the Pharmacy Act affects chemists who own branch shops. A Mr. Roland Phillips, of Carmarthen, managing a shop professedly belonging to a Mr. W. E. Jones, sold some oxalic acid to the assistant-secretary of the Trade Association, and labelled it with Mr. Jones' label. There does not seem to be any doubt that in this case Mr. Phillips was a *bonâ-fide* servant to Mr. Jones, though it was shown that the latter lives almost always in London, and visits Carmarthen only about once a year. Mr. Jones is qualified; Mr. Phillips is not. It is quite clear that the latter cannot sell poisons in his own name, or he would be subject to prosecution under section 15 of the Pharmacy Act. Now the Carmarthen magistrates had the judgment of Mr. Justice Grove in the case of *Templeman v. Trafford* to guide them, and, after some hesitation, they decided that Mr. Phillips had infringed the law. The judgment referred to is fully reported in our last December number. The cases were not altogether similar. The defendant (*Trafford*) was not by any means a servant to the registered chemist in the sense that Mr. Phillips was to Mr. Jones. At the most he was only an agent, and the counsel for the Association put the question to the Court whether that agency carried with it such a contract as to bring the respondent within the seventeenth section of the Pharmacy Act or not. The Association, in fact, when they appealed in the case of *Templeman v. Trafford*, seem to have only desired to put down evasions of the Pharmacy Act by means of agencies. In the *Oxford* case the label bore an address which was not that of the shop where the poison was sold; at Carmarthen the address on the label was correct. Mr. Justice Grove said the whole question turned upon who was the seller. He had not the courage to interpret the clause with rigid literalness as the higher Courts did in regard to the word "person" in the Pharmacy Act, for he perceived that that would require every sale of poison to be made in the name of the assistant or apprentice who might actually make it. So he compromised the matter, and decided that the person who generally managed the business was to be taken as the seller. "For instance," said the judge, "take the case of the eminent chemist Bell, of Oxford Street; one does not suppose that

the late Mr. Bell personally sold all the poisons sold or dispensed at his establishment: he would employ for that purpose qualified persons, but would personally superintend the sale; it would not be necessary that his hand should be the hand that sold." However, he decided that the defendant in the case before him was sufficiently independent of the qualified chemist whose poison he had sold to make him responsible in law, and he so found. The Carmarthen magistrates considered that the case before them was sufficiently like the Oxford case to be governed by Mr. Justice Grove's judgment.

Practically, no doubt, Messrs. Jones and Phillips were evading the law; the latter, an unregistered man, was, to all intents and purposes, carrying on a chemist's business in Carmarthen, and thus nullifying whatever good the Pharmacy Act was intended to accomplish. They have got, at any rate, common-sense justice.

But, apart from them personally, how are other chemists affected? It must be remembered that Mr. Phillips being unqualified makes no difference to the decision. The point is that, as far as the 17th section of the Act is concerned, he should use his name on the label as the seller, and not the name of the real proprietor. What do chemists who own branch shops say to that? The law, as now interpreted, declares that in the first place the manager of their branch shop must be qualified, a reasonable enough requirement, but one which has not been previously understood; and, secondly, requires that that manager must label all poisons sold at his branch with his own name.

The law further seems to require that if a chemist lives away from his business, is not actually the occupier of the house where the poisons are sold, he is not the "seller" of them, in which case the name of the person who is the occupier ought to appear on the labels.

Lastly, the law evidently requires the name of some living person to appear on the label as the seller. To confine ourselves to the instance named by Mr. Justice Grove. No stretch of legal imagination can suppose "the late Mr. Bell" to superintend now the sales of poisons at the house which he once managed. Who ought to be named as the "seller" there, it is not for us to say, nor do we know what name is actually used; but in that and in many other well-known instances names of non-existing persons are believed to be used as "sellers" of poisons. There can hardly be a doubt that this practice is contrary to the law laid down by Mr. Justice Grove and acted upon by the Carmarthen magistrates.

THE "GRAPH" PATENT.

A CORRESPONDENT sends us a letter stating that he, with many others, has had to smart for quite unintentionally infringing someone's patent for manufacturing the graphs which under various names have been manufactured all over the country. The facts of the case, supplementary to those which our correspondent gives, seem to be, as well as we can ascertain, these:—

The Graph patent was granted in 1878 to the agent of the Bohemian inventors, Vincenz Kwaysser and Rudolf Husak. It has been infringed from the very first. Its present owner in England is a retired military officer, who now trades as the Copying Apparatus Company, formerly the Hektograph Company. His agent is travelling in the North claiming damages from all who have sold any of the infringements of his patent, and by threats of legal proceedings he is obtaining considerable sums. The patent claims the use of the gelatine and glycerine mass with aniline inks, for the purpose of copying letters, drawings, and documents of all kinds. The mass closely resembles the composition used for printers' rollers, but its use for copying in this way is, or was, a new invention.

The only claim that the patentee can make is for profits on the sale of the infringing articles. But, unfortunately, however trifling the profit may be which has been made, the cost of defending an action is at least 10*l.*, and we hear of sums from that amount up to 50*l.* being paid to compromise.

We are not prepared to say that the patent on which this claim is made is not a valid one. For anything we know to the contrary it is valid. But we confess we do not understand why heavy sums, out of all proportion to the profits made, should be exacted from persons who may have sold two or three copies of the patent, not knowing anything about it. If any other of our readers should be attacked we would advise him to offer fully the profit he has made on the article, and refuse to pay more. We would suggest, however, that this advice should be subject to the approval of a solicitor.

We shall be glad to have the name of any person who has been threatened. Probably we cannot do any good in the matter, but it may be found desirable that scattered defendants should communicate with each other.

THE MEDICAL AND SANITARY EXHIBITION, 1881.

At a meeting of the Executive Committee of the Parkes Museum Committee, held on January 27, Mr. Mark II. Judge, as secretary of the exhibition held last year at South Kensington, presented the final report of the Exhibition Committee. They showed a net profit, which was handed over to the museum, of 93*l.* 11*s.*, together with furniture and fittings to the value of about 100*l.* Besides this, contributions to the Guarantee Fund to the amount of 86*l.* 19*s.* were transferred to the Parkes Museum Building Fund.

THE UNITED STATES GOVERNMENT AND THE CHEMISTS AND DRUGGISTS' DIARY.

THE fiscal system of the United States is an extraordinary product of high civilisation, regarded from a distant point of view, and its beauty does not develop on closer inspection. If it had been elaborated by the aboriginal inhabitants of the American Continent it might have been considered with complacency, but as an outcome of Anglo-Saxon intellect we are simply ashamed of it. For years past we have sent a considerable number of "The Chemists' and Druggists' Diaries" to subscribers all over the United States. We duly pay the postage on them, and heretofore they have reached their destination without any interference. Last year, however, an able official, the same, we believe, as the gentleman who now occupies the honourable post of Consul-General of the United States in London, discovered the alarming fact that certain of his countrymen were reading other literature than that of home production; so he planned a scheme to bring the mails under the supervision of the Custom-house officers. The latter have instructions to examine all bound books which come to the United States by mail, to appraise the same, and to charge the consignee 25 per cent. of the estimated value as duty. The active and intelligent officer has probably an interest in valuing the book at as high a rate as possible, and there is practically no check on his powers. The consequence was when "The Chemists' and Druggists' Diaries" reached America they were appraised at 8*s.* 4*d.* each and a duty fee of 50*c.* was demanded of everyone to whom they were delivered. Of course, as a rule, American citizens must themselves accept the consequences of being hedged about with so much protection. This time, however, we choose to take upon our-

the burden of the tax, and we have therefore issued following circular to our subscribers in the United States:—

SIR,—We have heard with much regret that the United States Customs have charged 50c. on the copies of The "Chemists' and Druggists' Diary" sent by us free to all subscribers to THE CHEMIST AND DRUGGIST. We have represented the injustice of this charge both to the United States Consulate here, and also to the officers of the Customs at New York. We claim that no charge ought to have been made because we send the book free, or that, in any case, the charge made is quite unreasonable, because we sell the books and pay postage on them for 2s. 6d., which would make the United States Customs duty not more than 10c. We have not yet received a definite reply; but whatever notice may be sent in our application, we hereby undertake to receive this circular in acknowledgment sent to us or to our agents as good for 50c., after it has been endorsed by a subscriber who paid that sum as duty on "The Chemists' and Druggists' Diary."

Respectfully,

EDWD. HALSE.

We do not value the very doubtful compliment implied by the estimate made of the Diary, and we still look for the attention we have applied for from the New York Custom-

MINING LANE BENEVOLENT FUND.

Subscribers to the London Commercial Sale Rooms, Mining Lane, have inaugurated a Benevolent Fund for the relief of those of their number who fall by the way. There are about 1,600 subscribers to the Rooms, most of whom are merchants and brokers. Over 2,000l. was collected to start the fund, the shareholders of the rooms contributing 500l. We do not for a moment question the benevolent motives of those who have inaugurated this fund, and we have no doubt it will prove of service; but it cannot fail to strike anyone, and it may as well, therefore, be said that inasmuch as the majority of those who will be benefited by the fund will almost certainly be ruined speculators, as the fund is to be available to members of the Rooms or their families only, the practical effect of its institution will be to some extent the encouragement of the spirit of speculation, which may or may not be a healthy element in the atmosphere of Mining Lane.

THE DANGER OF CHLORATE OF POTASH.

The dangerous nature of the manufacture of coloured fires is well recognised in this country by their being included in the regulations relating to pyrotechny. Still, from the numerous inquiries for formulae for such fires that we receive from time to time, we judge that they are mixed by chemists to some extent. The following report, which we take from THE AUSTRALASIAN SUPPLEMENT TO THE CHEMIST AND DRUGGIST, may serve as a caution to experimenters and manufacturers:—"A shocking occurrence took place at Wellington (N.Z.) on December 21, by which a lady was killed by pieces and a building partially wrecked. The facts are as follow:—At the shop of Mr. Barraud, Chemist, Lambton Quay, some blue-fire was in course of preparation for use at the theatre. On testing a small portion of the mixture it was found dangerously explosive, too much chlorate of potash having been inadvertently used in the composition. Accordingly, Barraud's assistant, named Henry, formerly of Christchurch, took it out into the yard and began to destroy it by slow combustion. He had occasion to leave for an instant, and before he could return his wife happened to go into the yard, and, seeing chemicals on fire, at once threw a bucket of water on the burning mass. A terrific explosion immediately took place, which shook the whole city, and was heard at a distance of several miles. Poor Mrs. Anthony received the full force of

the shock, and was frightfully mutilated. Both arms were torn off, also one leg, the lower jaw, and the scalp. Wonderful to relate, she lingered for some time. All the windows in the vicinity were smashed, and other damage done. The stone mortar in which the composition had been mixed was hurled many feet into the air, and thrown clear over the tops of the houses into the next street. Fortunately, nobody else was injured. This dreadful occurrence created a profound sensation in the city."

PHARMACEUTICAL SOCIETY OF VICTORIA.

THE Council of the Pharmaceutical Society of Victoria have issued their twenty-fifth annual report. A quarter of a century is a long period for a young colony like Victoria to have an official pharmaceutical history. Their example and success have stimulated the progress of pharmacy in the other Australasian colonies. They have a realised capital of over 600l., which is growing year by year. Besides this, they are preparing for rainy days by founding a Benevolent Fund, which has reached 190l. A single call on the fund was reported during last year, drawing on it to the extent of 2l. only. The Council are trying to get from Government a grant of land for the erection of a hall and laboratory, but they have not yet succeeded in winning this concession. They have been asked by the Pharmacy Board of Victoria to consider the desirability of amending the Sale of Poisons Act, and they have also been invited to give evidence before the Royal Commission appointed to consider the amendment of the tariff. The present officials of the Society are Mr. William Bowen, J.P., President; Mr. John Turner Thomas, Vice-President; Mr. C. R. Blackett, M.L.A., J.P., Librarian; Mr. Henry Gamble, Hon. Treasurer, and Mr. Harry Shillinglaw, Hon. Secretary.

DANIEL BELL HANBURY.

WE mentioned last month the death of one of the most venerated of British pharmacists, Mr. Daniel Bell Hanbury, in his 89th year. A little before his death, on February 8, when he attained his 88th birthday, he had expressed his desire to depart, and the fulfilment of his prayer was not long denied to him. The loss of his noble son, Daniel Hanbury, in 1875, and two years later of her who had been his beloved companion for over 50 years, had been severe afflictions, which he had borne with Christian resignation, but with keenest grief. Since then, in peaceful retirement and in the society of a married daughter, or of his son Thomas, in his beautiful gardens at Mentone, the last years of his long and useful life have been spent, anticipating with ever-increasing faith the reassociation with those he had so much loved.

That life was the closest link left to us with the pharmacy of the past. Daniel Bell Hanbury was a nephew of William Allen, and became his partner in business. Like him, he was a member of the Society of Friends, and became his coadjutor, not only in business, but also in his philanthropic labours. He joined with Jacob Bell in the foundation of the Pharmaceutical Society, served on the Council from the first, and from 1852 to 1867 filled the office of Treasurer.

A glance round the noted chemists' businesses which date from the early part of this century shows a very large proportion which were established and conducted by members of the Society of Friends. The fact that men of that class have had a genius for making pharmacy a success carries its lesson on the surface, and it may be thought of sometimes nowadays. Patience through the days of small things, and the strictest integrity in all circumstances, have been the characteristics

which have won for them so enduring a share of public confidence. They have not been men who ground their lives away in the determination to make a business; far from that. A dozen names will suggest themselves of Quaker druggists who have been at least as noted in the philanthropic as in the pharmaceutical world. Our age needs more of their old faith in principle applied to every-day business, which alone has ensured enduring success, or, if not, can at least make failure honourable.



AND

Literary Notes.

KOUMISS.

Dr. George L. Carrick.—Koumiss, or fermented mare's milk, and its uses in the treatment and cure of pulmonary consumption and other wasting diseases; with an appendix on the best methods of fermenting cow's milk. Edinburgh: Wm. Blackwood & Sons, 1881. Pp. 12 and 294; map.

THE author has had unusual experience. He is secretary and ex-president of the St. Petersburg Physicians' Society, and physician to the British Embassy at St. Petersburg. He has been an officer of the Brompton Hospital for Consumption. Seven times he has visited the Steppes, and the authorities he quotes show that he is familiar with one of the Englishman's sealed books—the literature of Russia. He may like to know that his name has been dropped from the Medical Register.

His book is written to give physicians a more intimate acquaintance with the koumiss cure. In successive chapters he deals with the history and literature of koumiss; mare's milk and that of other animals; the chemical changes which milk undergoes during fermentation; the milk supply, and the influence of breed and pasture on its quality; the preparation of koumiss on the Steppes; its physical properties and physiological and therapeutical action; statistics, contra-indications, mode of use, and the journey to the Steppes. The appendix gives two formulæ devised and used by a consumptive doctor and a professor, both Russians, by which galazyme, or fermented cow's milk, can be prepared. The map shows how those who wish to get the full benefit of the koumiss cure can reach the Steppes.

Koumiss, or kemiz, may have been known from time immemorial to the Mongol nomads. Like other things which make up our daily life, it is rarely mentioned in literature. A doubtful description in Herodotus, two incidental allusions in the Russian annals 1,500 years later (twelfth and thirteenth centuries), Marco Polo's note that the Tartars drank a right good drink made from mare's milk, and called kemiz (1298), and a jolly description by a French missionary-friar, William de Rubruquis (1253), are all that has been gleaned from ancient writers. Nearly 500 years elapsed before koumiss again attracted notice. The practical result was small till 1858, when Dr. N. V. Postnikov started a koumiss establishment near Samara, on the Volga. Since then the virtues of this drink in wasting diseases have gained it increasing renown. Since 1781, says Dr. Carrick, all who have gained a practical acquaintance with koumiss on the steppes have been unanimous in praising it. Disparagement has come only from those whose knowledge has begun and ended in the library.

Mare's milk, compared with cow's, contains half as much nitrogenous matter and salts, a third as much fat or butter, and a fourth more milk-sugar. Woman's milk, compared with mare's milk, contains twice as much fat and a ninth more milk-sugar, so that mare's milk is more like woman's than it is like cow's milk. In the proportion of fat, woman's milk stands between mare's and cow's. In the proportion of nitrogenous matters and salts, woman's and mare's milk are

nearly alike, containing only half as much as cow's, while both contain far more milk-sugar than the latter. Cow's milk may be called the richest, but we must notice a curious fact which concerns digestibility. Acids which precipitate the casein of cow's milk in thick curdled masses do not appreciably affect woman's. The casein of woman's milk is easily soluble in distilled water and lactic acid; that of cow's milk is almost insoluble. Dr. Langgaard has shown that the casein of mare's milk resembles that of woman's. When precipitated by alcohol the casein of both falls in fine flakes, that of cow's in thick lumps. Neither woman's nor mare's milk is completely coagulated by rennet; and in other points their physical characters seem to show that they are far more digestible than cow's milk. The greater digestibility rests not on the proportion of the constituents, but on the different way in which these are acted on by reagents. Mare's milk fermented, and that only, the author allows to be called koumiss. Milk exposed to the air sours spontaneously by the formation of lactic acid during the lactic fermentation. This fermentation stops as soon as the milk becomes too sour; hence, in making lactic acid economically, we must add an antacid like chalk, which will form lactates and keep the solution nearly neutral. In mare's milk, when the lactic fermentation stops, the vinous fermentation begins. It is this which produces koumiss, and it is its large proportion of lactic or milk-sugar which fits mare's milk for this purpose. The lactic is split up into alcohol and carbonic acid with traces of succinic acid and glycerine. Under favourable circumstances the butyrous fermentation follows, which makes the koumiss undrinkable.

A peculiar minute vegetable organism is the cause of each of these fermentations. No lactic acid, no alcohol, no butyric acid is produced if the appropriate species of ferment is absent. The conditions under which these are active vary considerably. The lactic fermentation is arrested by the increasing acidity of the medium; this prevents the butyrous but does not affect the vinous fermentation; the presence of free oxygen, which assists the latter, almost prevents the formation of butyric acid; the presence of carbon dioxide, which hinders the formation of alcohol, increases the activity of the butyrous ferment; lastly, the lactic and vinous ferments are active between 78° and 93° F., while the butyrous fermentation requires a temperature of 98° F. to develop it.

In practice the nomads apply these principles, although they know nothing of them. In the evening mare's milk is mixed with a ferment, stirred, and left for the night. Next morning the lactic fermentation is almost complete, and to assist the vinous the liquid is briskly agitated or churned for twenty minutes together at intervals of an hour. If the weather is cold they wrap the vessels in warm coverings, or bring them into their tents and light a fire. The vessels are of skin, and the evaporation from the surface keeps the liquid cool in hot weather.

At the koumiss establishments ice is used to keep the temperature below the point where the butyrous fermentation commences. Milk which is rich in fat seems specially liable to this accident; consequently at some establishments the milk is tasted, and when richer than usual is rejected.

The recent researches point to a means of regulating these various fermentations better than the "rules of thumb" now used. When microscopic organisms are cultivated in a fluid medium, such as milk or chicken broth, it is almost impossible to get specimens of one species without those of two or three others; the fluid allows them to wander at will, and they get inextricably mixed. This annoyance induced a recent investigator to adopt another method of cultivation. He made a suitable jelly of animal materials, and used this as his seed-plot. He found that the growth of each species was localised to a certain extent, so that with care he could obtain a clean crop of the desired organism. Microscopists might find it profitable to prepare in this way a ferment which should be free from the butyrous but contain the vinous and lactic ferments. This would annihilate the chief difficulty in the preparation of koumiss, and would simplify the preparation of a palatable drink, even from cow's milk. It might, however, prove difficult to prevent the access of fresh butyrous germs.

Those who intend to try the koumiss cure must make it for at least two months the serious business of their lives.

They must take violent exercise to cause thirst; they must drink, sleep, and exercise in due order; and unless they consume every day five to fifteen champagne bottles of koumiss they must expect but slight results. The strongest koumiss contains about 2 per cent. of alcohol, 8 per cent. of lactic acid, 6 per cent. of lactin, much casein in solution, and more in suspension. Its use gives an appetite even for mutton, almost the only viand on the Steppes. It stimulates digestion so much that hardly anything passes through the bowels. In 1875, of 234 military patients who tried the cure 198 gained in weight from 1 lb. to 27 lbs; the average gain was 6½ lbs. In 1874 the average gain in weight was 8 lbs.; in 1876, 8½ lbs.

It is sufficient idea of the good effects of koumiss can be gained without such an accumulation of details as the author provides. It seems to act like a charm in most wasting diseases.

It is a substitute for koumiss when mare's milk cannot be obtained, the author tolerates the use of fermented cow's milk, for which the name "Galazyme" was suggested by Dr. Schnepf in 1865, and "Galactozyme" by a member of the Constantinople Société de Pharmacie about a year ago. We give brief abstracts of the two processes suggested here, omitting the explanatory remarks.

Dr. Polubensky's process:—

1. The morning pour into an oaken churn a bottle of fermented cow's or mare's milk, a tumbler and a half of warm milk (90° Fahr.) (in which you may use cane or, better, milk sugar has been dissolved), and a bottle of skimmed cow's milk; churn for half an hour, leave for three hours at 60° Fahr.; then churn for half an hour, and add a bottle of skim milk with warm water if the milk is thick; churn for an hour and a half; leave for half an hour, add a bottle of skim milk and churn for a few minutes at short intervals till the koumiss is ready (about 14 hours after beginning). A thick froth forms when the process is nearly complete, and when this falls the koumiss is ready. It should be poured into champagne bottles, corked, and left for the night at from 60° to 70° Fahr. It may be used as late as the fifth day if it is kept in a cool room. Two bottles of the richest brew must be kept to serve as ferment for fresh quantities.

Dr. Levshin's process:—

Dissolve 18 oz. of milk-sugar in 3 quarts of water; mix a quart of this with 3 quarts of carefully skimmed fresh milk that has stood overnight, and add 1 or 2 pints of koumiss. Leave for 6 or 8 hours at 60° to 70° Fahr. Then add the two remaining quarts of sugar solution and 6 quarts of skimmed milk; then churn for 15 to 20 minutes at intervals of an hour for 4 days at a temperature of 65° to 75° Fahr. Before bottling, churn for a half hour. Keep the bottles at a temperature of 65° to 75° Fahr. for eight hours before removing to a cool place. After five days it becomes too sour to be drinkable. A spiral tap must always be used.

Dr. Carrick's book contains the best account of koumiss we have met with. There is one grave fault we must not overlook. He has sent into the world a book of 300 pages, which he doubtless hopes will become a work of reference, but has spoiled his chances and roused the animosity of his readers by giving no index.

The Preservation of Foods by Cold.—An Address delivered before the Brighton Health Congress by T. B. Lightfoot, M. Inst. C.E., &c. Brighton: G. W. Markwick.

The author describes the process of freezing meat and transporting it from Australia and elsewhere in refrigerating chambers. He reckons that at present rates of freight, which are exceptionally high between Melbourne and London, Australian beef and mutton can be profitably sold to salesmen in Smithfield at 5½d. per lb. The advantage of bringing the United Kingdom into communication with Australia and South America for the supply of meat is shown by a table drawn up by the author, from which it appears that here cattle are, in proportion to population, 28, and sheep 8; in Queensland the proportion is—cattle, 99; sheep, 3068. In the United States the proportions are 66 and 8 respectively.

Manual of Botany, including the Structure, Classification, Properties, Uses, and Functions of Plants. By Robert Bentley, F.L.S., M.R.C.S. Eng. Fourth Edition. London: J. & A. Churchill. 1882.

This work having already passed through three very good editions is removed from direct criticism, its favourable reception being its best recommendation.

Although an unexpected and unavoidable delay has prevented the earlier appearance of this fourth edition, any

inconvenience that might have been experienced is amply condoned by the care that has been taken in bringing the botanical information contained in the manual up to the latest date.

The author states that, owing to the great advances made within the past few years in this branch of science on the continent of Europe, and more especially in Germany, many important alterations and additions have had to be included in the text, and numerous new woodcuts have been supplied.

The manual has been carefully revised throughout, and, as far as regards the subjects of elementary structure, the reproductive organs of Acotyledons, and the physiology of plants, it may be considered as a new treatise.

For these necessary additions the author is in part indebted to several distinguished friends and old pupils, while constant reference has been made to the standard work of Sachs, "A Text-book of Botany," and to the Pharmacographia of Flückiger and Hanbury. Professor Bentley's own volume on "Medicinal Plants," the joint production of himself and Dr. Trimen, has been laid under contribution, and the reader is directed to its pages for figures and fuller descriptions of those plants which are more briefly noticed in the manual in the part treating of systematic botany.

In the arrangement and characters of the natural orders the author has not thought it advisable to depart in any essential particulars from the order followed in previous editions.

The concluding portion, which bears solely on physiological questions, will be found of the deepest interest.

The food of plants, their whole manner of life, their luminosity, movements, and odours, are succinctly and clearly described; and though from the nature of the book the summary is rapid and condensed, still the recent investigations of Darwin and other observers are effectively presented.

Copious indexes are subjoined, without which all technical books of reference are to some extent a dead letter. With regard to the general nature of the manual it would be idle to speak, for its teachings have become familiar, and we recommend the fourth and revised edition to a new race of students.

Les Pyrénées-Orientales et leur Hydrologie. By J. L. Soubenau.

A PAMPHLET, illustrated by a coloured map, in which the author traces to geological sources the universal constituents of the many medicinal springs for which Aquitaine (*Aquas tenans*) is so famous.

A Systematic Handbook of Volumetric Analysis. By Francis Sutton, F.C.S., &c. Fourth Edition. London: J. & A. Churchill.

MR. SUTTON'S work is so fully recognised as the standard English treatise on the subject of volumetric analysis that it is hardly necessary for us to do more than announce the appearance of a new edition. An examination of this edition reveals innumerable corrections and insertions, which the progress of chemical science has rendered necessary. With this work at hand, the practical chemist may be confident of finding a careful description of the process (not a mere indication of it) of volumetric analysis of any substance which he may have to examine, if the system be applicable to it. A translation of Mr. Sutton's book into French is now being prepared by Dr. C. Méhu.

Experimental Chemistry for Junior Students. By J. W. Emerson Reynolds, M.D., F.R.S., &c. Part II.—Non-Metals. London: Longmans.

WE noticed the first part of Dr. Emerson Reynolds' series of four small volumes on Experimental Chemistry in January, 1881. In that part, by a course of experiments, he familiarises the student with the elementary facts of chemistry, and brings before him especially oxygen and hydrogen. In this second part, exclusively by means of experiments, clearly described, the instruction progresses *via* air, nitrogen, its compounds, chlorine, iodine, bromine, fluorine and its compounds, leading to an acquaintance with the varieties of glass, carbon in its several forms, its gases, sulphur and its compounds with hydrogen and oxygen, selenium, tellurium, boron, and phosphorus, and their compounds. We know of no other work which offers in so small a compass the opportunity of acquiring a firm foundation of chemical knowledge.

Nitro-Glycerine as a Remedy for Angina Pectoris. By Wm. Murrell, M.D., &c. London: H. K. Lewis.

DR. MURRELL records in this treatise how he first "proved" (as the homœopaths say) nitro-glycerine on himself and on many of his friends. He also quotes from the observations of other physicians. The general result seemed to be that the symptoms produced by the medicine were not altogether dissimilar to those of angina pectoris. This fact seems to have led the author to employ nitro-glycerine in cases of angina pectoris, and he brings forward important evidence as to its value. Incidentally the remedy is shown also to be of service in neuralgia, though it generally replaces the facial pain by a violent headache. It is a most potent medicine, however, and sometimes very small doses bring on alarming symptoms. Dr. Murrell mentions one patient who could take a dose containing one grain of nitro-glycerine, while another was dangerously affected by the $\frac{1}{50}$ th of a grain, and a third suffered unpleasant sensations from the $\frac{1}{600}$ th of a grain. He recommends a one per cent. alcoholic solution as the most convenient method of administration, and he also speaks favourably of Messrs. Parke, Davis & Co.'s nitro-glycerine pillules and Mr. Martindale's nitro-glycerine tablets.

Hahnemann as a Medical Philosopher. By Richard Hughes, L.R.C.P.Ed. London: E. Gould & Son.

UNDER this title has been published the second Hahnemann oration. Dr. Hughes gives a critical, but naturally a very laudatory, analysis of the *Organon*. He also sets himself the task of replying incidentally to some of the candid but severe criticism of Hahnemann's theories in Dr. Bristowe's "Address in Medicine," delivered before the British Medical Association last summer. Dr. Hughes is a skilful and courteous controversialist, as well as an interesting writer, and most people, except the most devoted of Hahnemann worshippers, will be content to take their knowledge of the exceeding dry homœopathic bible from this lecture rather than seek for a more exact acquaintance with it by studying the original.

Materia Medica and Therapeutics. — Inorganic Substances. By C. D. F. Phillips, M.D., &c. London: J. & A. Churchill.

DR. PHILLIPS published the first part of his important work on *Materia Medica* in 1874. In that volume vegetable products only were discussed. The long interval which has elapsed between the appearance of these volumes is explained by the serious railway accident in which Dr. Phillips was a sufferer, and which incapacitated him from all exertion for two years. We are very glad to find from the issue of this volume that he has at least to a great extent recovered from its effects.

Dr. Phillips was formerly lecturer on *Materia Medica* at the Westminster Hospital Medical School, and he treats the subject as it should be treated for medical students, that is to say, his main object is to give the most modern ideas as to physiological action, and the therapeutic value of the medicines described, rather than to discuss their origin, preparation, and characteristics. The pharmacy of his subject is not neglected, but it is quite subsidiary to the therapeutical discussion. Consequently this work of Dr. Phillips's is a work by itself. It is in no sense a reproduction of the well-known works of Pereira, Royle, or Scoresby Jackson, and, indeed, has but little in common with them; but it is rather a collection of monographs on the most important remedies of the *Materia Medica*, in which the author has collected the observations of all the chief authorities, and has added those suggested by his own experience. It may certainly be open to question whether the work would not have been more useful if its information had been classified under diseases rather than under remedies, but it can be easily used as a medical guide by means of a comprehensive index of diseases which is added to each volume. The section just published contains over 800 pages, and comprises the metallic and non-metallic elements and their preparations, the acids (including citric and tartaric) and water, including mineral waters and baths, and remarks on sea-bathing. Dr. Phillips writes without prejudice, and frequently makes reference to non-official pharmaceutical preparations. In his preface he speaks of his book as now completed, though we notice that the alcohols and ethers,

which he had intended to include, have not yet been touched upon.

WE have been favoured with copies of the *Medical Register* for 1882, and the *Dentists' Register* for 1882, from the Registrar of the General Medical Council. The former is a volume of 919 pages, and contains the names, addresses, and qualifications of 23,275 persons. It is sold for 6s. The number of registered medical practitioners in the United Kingdom is this year 339 more than in 1881. The *Dentists' Register* is sold at 3s. 4d., and contains the names of 5,341 dental practitioners and 121 registered dental students. Last year the numbers were 5,266 and 81 respectively. Of the dentists registered, 359 are licentiates of the English College of Surgeons, 278 of the Irish, and 21 of the Edinburgh College of Surgeons, and 40 are licensed by the Faculty of Physicians and Surgeons of Glasgow. There are 20 others with additional surgical qualifications, and 4 who are American doctors of dental science. These make up 722 in all. The remaining 4,623, or 86.49 per cent. of the whole, have been registered on their own declarations without any additional qualifications.

DR. EDWARD R. SQUIBB, and his two sons, Dr. Edward H. Squibb and Charles F. Squibb, A.B., of Brooklyn, have published the first number of a journal, which they modestly entitle "An Ephemeris of Materia Medica, Pharmacy, Therapeutics, and Collateral Information." Dr. Squibb is universally looked up to as the leading practical pharmacist of America, and nothing that he writes or says is overlooked, by those who practise the same art either in his own country or in Europe. All of those, therefore, who receive this "mere ephemeral waif," as he designates it in his introductory remarks, will know that they are obtaining material of solid and permanent value. Dr. Squibb's "Announcement" is of a rather original character. First apologising for starting a new journal, he promises that if this one, "undertaken with much hesitation and diffidence, should prove at any time to have no reason to be, it shall at once cease." Those who get it will get it gratuitously. "No subscribers are solicited, nor any subscription list kept, nor are exchanges with other journals asked for. It may be issued bi-monthly, or quarterly, or irregularly, or not at all, as the occupations of an otherwise very busy life may determine; and its chief object is, in an informal way, to note down from time to time the results of a long experience and observation, and the deductions therefrom, together with occasional original work, as time and opportunity may serve." The first number contains articles on the morphia strength of opium and the new (U.S.) Pharmacopœia, Flückiger's process of opium assay modified by E. R. Squibb, the Adulteration Bill before Congress, and several minor notes.

AN important work on cinchona culture is announced for immediate publication. It is a translation of K. W. Van Gorkom's "Handbook of Cinchona Culture." Van Gorkom was formerly director of the Government cinchona plantations in Java, and the translator, Mr. Benjamin Daydon Jackson, is Botanical Secretary to the Linnean Society, and is otherwise known as the compiler of the valuable "Index to the Literature of Botany," recently issued. Only 250 copies of the work will be published, and the price will be 40s. Messrs. Trübner & Co., of London, will receive subscribers' names.

WE have received No. 5 of Mr. Thomas Christy's "New Commercial Plants and Drugs." In this number special attention is called to tanning materials. There is room for great development in this branch of commerce, and Mr. Christy announces that he is willing to examine specimens of new materials thought to contain tannin. The particulars sent should contain a note of the possible supply, cost of collection, and loss on drying. Mr. Christy gives further particulars of most of the new drugs.

BOOKS RECEIVED.

The Calendar of the Pharmaceutical Society of Ireland, 1882. Price 1s.

The Practice of Commercial Organic Analysis. By Alfred I. Allen, F.I.C., &c. Vol. II. London: J. A. Churchill. (review deferred.)

DR. PAVIA AMBROGIO.—*Isomeria ed isodinamismo della materia.* (Estratto dal *Bullettino Farmaceutico* di Milano, 1882) Milano, 1882, pages 19.

Scientific Notes :

Chemistry, Pharmacy, Botany, Materia Medica, &c., Original, Selected, and Translated.

BORAX A SOURCE OF HEAT; A CHEMICAL POULTICE.

THE *Moniteur Scientifique* contains a communication from M. Peligot, who reports a curious fact observed by W. H. Wideman, chemist, which he thought had not been previously observed. Borate of soda is made by dissolving 2,000 kilogrammes of soda crystals in 2,000 litres of water, and adding boric acid (tincal) to saturation. The mixture is raised to boiling-point, and a liquid of 36° B. is obtained. From this an octahedric borax, containing five equivalents of water, is obtained. But the ordinary prismatic borax contains ten equivalents of water, and this is obtained from the solution at a lower temperature and at 56° B. This phenomenon is itself curious. Now if either of these boraxes be carefully calcined and powdered, it will be found that wrapping the powder in a moist linen cloth that it will rapidly acquire an elevation of temperature, attaining ultimately, but never exceeding, about 80° C. (176° F.). Calcined lime, lime, and other dehydrated bodies, when they resimulate water, become quickly heated to a much higher temperature, a temperature which cannot be supported by the skin. The peculiarity of this heat of borax being limited to the point named, and lasting for a considerable time, suggests to M. Peligot its employment for poultices, for keeping food warm, and probably for other useful ends.

PREPARATION OF LACTIC ACID FROM DEXTROSE.*

ERICH KILIANI finds that when dextrose is acted upon with a concentrated aqueous solution of caustic potash, a considerable quantity of lactic acid is formed, 27 per cent. the dextrose being converted into that substance. Solutions consisting of equal parts of grape sugar and water, and of caustic potash dissolved in half its weight of water are, after cooling, mixed in the proportion of 10 parts by weight of dextrose to 10 parts by volume of the potash solution. When considerable quantities are mixed, the alkali must be added slowly and the mixture kept cool by artificial means. The mixture is then poured into a stoppered bottle and heated therein to 35° C. for a few hours, after which the temperature is gradually raised to 60° C., and the liquid digested at this temperature until it ceases to give a reaction with Fehling's test. This is generally the case after six or seven hours. In the meantime a mixture of three parts of sulphuric acid and one part of water is treated with a known quantity of the caustic potash solution employed in the conversion of the grape sugar, so as to ascertain the amount required to exactly neutralise the potash used.

The mixture from the reaction of potash and the grape sugar is allowed to cool and the requisite quantity of the sulphuric acid gradually poured in. The liquid, which is of reddish-brown colour at first, becomes clearer on acidulation, and a quantity of potassium sulphate separates out before all the sulphuric acid has been added. When this has been effected the whole is evaporated down a little and alcohol of 90 per cent. added with constant stirring until a small quantity filtered off and tested gives no further reaction with a solution of barium chloride. The whole is then filtered and the filtrate mixed with zinc carbonate, previously made into a thick paste with water, the mixture heated over water bath and filtered boiling hot. Provided that an excess of alcohol has been avoided, the filtrate, when quite cool, congeals to a magma of zinc lactate, which is obtained quite pure upon a single recrystallisation.

The author is carrying on his experiments with the view of ascertaining whether inverted sugar and sugar from starch yield lactic acid when treated in the above way, since these would be the most suitable substances for the production of this acid on an industrial scale.

PREPARATION OF SUCCINIC ACID FROM TARTARIC ACID BY FERMENTATION.

THE *Berichte der deutschen chemischen Gesellschaft*, February 13, 1882, contains a paper by F. K  nig, of the Enological Institute in Asti (Piedmont), from which it appears that tartaric acid is the best source of succinic acid. Succinic acid is prepared from tartaric acid in the following way:—Two kilogrammes of tartaric acid are dissolved in water neutralised with ammonia, and the whole diluted to 40 litres. Solutions are added of 20 grammes of potassium phosphate, of 10 grammes of magnesium sulphate, and of a few grammes of calcium chloride are then added, and finally 20 c.c. of a solution of ammonium tartrate in a state of fermentation. (The latter may be prepared by diluting a portion of the above solution with about five times its volume of water, and allowing it to stand in a warm place, whereupon in the course of a few days it turns cloudy, and is full of bacteria.) The mixture is left to itself (air being excluded as far as possible) at a temperature of 25° C. to 30° C., until the weak evolution of gas has ceased, and a portion of the liquid upon being tested exhibits no further tartaric acid reaction. The time required for the complete decomposition of the tartaric acid is about six or eight weeks. The liquid is then evaporated to expel ammonium carbonate, clarified with albumen and boiled with milk of lime until a permanent alkaline reaction is established, and all the ammonia has been evaporated. After cooling, the calcium succinate is gently pressed to remove superfluous moisture, decomposed with sulphuric acid, and the succinic acid obtained and purified in the usual way.

According to the above method 2 kilogrammes of tartaric acid yield over 500 grammes of pure succinic acid.

Where large quantities of succinic acid are required, it is not necessary to use pure tartaric acid, for the crude solution obtained by decomposing calcium tartrate with sulphuric acid may be conveniently used in its place.

ACONITINE.

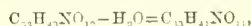
THE poisoning case of Dr. Meyer, of Winschoten, who died in April, 1880, from taking a dose of French aconitine in mistake for the German preparation, has given rise to a good deal of polemic as regards the various sorts of aconitine met with in the market. The subjoined remarks made by P. C. Plugge in the *Archiv. de Pharmacie*, Band 17, Heft 1, January 28, 1882, throw some light on the subject.

Maximum doses of the base are uncertain, on account of the difference in the quality of the preparation.

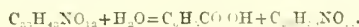
There is no sense in making a distinction between English, German, and French aconitine, because in each of these countries the aconitine differs according to the method of its preparation.

It appears from the researches of Wright & Luff that *Aconitum napellus* contains, besides aconitine, two other substances, a bitter but harmless substance—picroaconitine ($C_{21}H_{15}NO_{10}$), and a substance which has not as yet been examined.

The proportion of aconitine in the plant is dependent upon the less or greater cultivation of the soil upon which it has been grown. It is well known that some kinds of commercial aconitine have a very bitter taste, while others taste more acid. Further, under certain conditions aconitine gives up its water, and passes over into apo-aconitine—



or, under other conditions, it passes over into benzoic acid and a new base, aconine—



The possibility of these changes in aconitine may then well account for the difference in quality of the sorts met with in the market, which probably contain various mix-

* *Berichte der deutschen chemischen Gesellschaft*, February 13, 1882.

tures of apo-aconitine and aconine, and which may result from the different modes of preparing the substance.

IODOFORM, SOLVENTS FOR.*—IODOFORM BOUGIES.†

DR. VULPIUS, Director of the Academical Hospital in Heidelberg, has examined the relations of several solvents for iodoform, and finds that at the ordinary temperature the degree of solubility in 100 parts of the various menstrua is as follows:—

	Parts
Petroleum ether	1
Benzine	1.5
Oil of turpentine	4
„ lavender	7
„ cloves	8
„ fennel	9
„ rosemary	9
„ cassia (fr. cassia cinnamomea)	14
„ camin	16

From this it appears that there is some connection between the dissolving power and the proportion of oxygen contained in the above liquids, such power being greatest in those oils which contain the most oxygen.

A solution of iodoform in benzine or petroleum ether soon turns pink. A 5 per cent. solution of iodoform in chloroform very quickly assumes a dark-red colour. These latter reactions indicate a chemical change between the solvent and the iodoform.

*Iodoform Bougies.**—Bougies containing 50 per cent. of iodoform are prepared by the author as follows:—15 g. of the best gelatine are dissolved in a mixture of 50 g. of water and 7.5 g. of glycerine over a water-bath, the solution evaporated to 54 g., and then ultimately mixed by stirring with 27 g. of alcoholised iodoform; the resulting paste is poured into a warm lunar-caustic mould, and the latter placed in ice water to cause the contents to cool quickly, and thus prevent the iodoform from settling. The bougies are then dried to two-thirds of their weight.

Iodoform Bougies.†—The infirmary at Heidelberg requires bougies containing at least 90 per cent. of iodoform, but without gelatine. These are prepared, according to K. Müller, in the following way:—92.5 g. of alcoholised iodoform are rubbed up to a plastic consistency in a warm mortar with a solution previously made, consisting of 5 g. of gum arabic, 2.5 g. of glycerine, and 2.5 g. of water. The bougies are then rolled out of the size required between a couple of boards; the bougies are made each 10 centimetres long, and contain about 3.5 g. Should the mass be too friable, a little water is added. The bougies are now placed in a drying-box and left there for a couple of hours, and are then ready for use. When dry they have the following percentage composition:—Iodoform, 92.5; glycerine, 2.5; gum arabic, 5. To prevent them being squeezed flat by their own weight while drying it is advisable to support them on both sides with a piece of wax paper.

FURFUROL IN SPIRITUOUS LIQUORS.‡

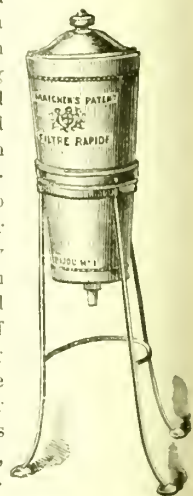
THE beautiful red colouration which is produced when commercial fusel oil is treated with a mixture of aniline and hydrochloric acid led A. Jorissen, two years ago, to suggest the employment of this mixture as a reagent for testing the presence of fusel oil in alcohol.

K. Foerster now shows Jorissen's method to have been based upon a false assumption, for it is no essential constituent of fusel oil which causes the reaction, which is due to the presence of a considerable quantity of furfural in common fusel oil. K. Foerster further finds that all ordinary fermented and distilled liquors contain more or less furfural, and the presence of a larger quantity of it in fusel oil is due to the boiling-point of the latter very nearly coinciding with that of furfural.



MAIGNEN'S PATENT "FILTRE RAPIDE."

THIS invention, which has been in use for some time in the wine trade, is now made in form suitable for the purposes of filtration either on a large or a small scale, as required by the chemist and druggist. It is supplied either in earthenware or in tinned copper. The engraving herewith shows one of the former style. Inside is fitted a conical, or, in the metal "filtres," a wedge-shaped frame, which is tightly covered by a cloth, or, for some purposes, with an asbestos cover. For simple straining the apparatus thus fitted suffices, and in some cases the sediment of the liquid to be filtered collecting on the cloth diaphragm itself assists in the filtration. But generally it is desirable to apply a surface of filtering-paper over the cloth. This is accomplished by making a pulp of sufficient paper with water, squeezing out the water, and then beating up the pulp with some of the liquid to be filtered. On pouring this into the "filtre" with some more of the liquid, and running once or twice through, the paper pulp becomes evenly set on the surface of the cloth, and thus a most efficient filtering-surface of great extent is provided. If further clarification be desired, charcoal, magnesia, isinglass, or albumen may be added to the liquid, and thus a surface of one of these may be super-imposed on the paper. The two chief objections to funnel-filtering are that the liquid finds its exit practically at the apex of the cone only, and that the filter is always liable to break. In Maignen's "filtre rapide" these difficulties are perfectly provided against, and great speed is attained along with perfect filtration. Chemists, who may buy a "filtre" for general purposes, will do well to notice that in some of the metal ones the wedge-frame is made of wood, which would probably retain the flavour and odour of whatever passes through. Metal or earthenware frames can be had, and these, for general use, would, we should think, be preferable. These filters are used by a good many wholesale druggists, and among our advertisements will be found the opinions of several well-known pharmacists who have adopted them.



SAUNDERS' "PREMIÈRE" WRITING FLUID.

WE have pleasure in noticing a very excellent new ink made by Messrs. Ayrton & Saunders, of Liverpool, to which they have given the title of the "Première." It is of very satisfactory fluidity, neither running from the pen regardless of the will of the writer nor blotching out in jelly-like lumps. It leaves on the paper a clear and distinct black, which has a tendency to deepen with age. The bottles are of a good size for their price, and chemists will find the article a satisfactory one to stock. Messrs. Ayrton & Saunders supply handbills respecting this ink, which are composed almost in the style of one of Thackeray's Roundabout Papers, and which, we fear, will tempt many a young undeveloped genius to buy the ink in the vain fancy that

* Archiv. der Pharmacie, Band 17, Heft 1, January 28, 1882.

† Pharmaceutische Zeitung, February 15, 1882.

‡ Berichte der deutschen chemischen Gesellschaft, February 13 and 27, 1882.

his or her pen will find it easy to shape from it words and fables to stir the souls of men.

STONE'S INDEX FILE.

MESSRS. GEORGE WATERSTON & SON, of London and Edinburgh, are wholesale and export agents for Stone's New Index Files, adapted for letters, invoices, receipts, or other loose papers which it is desirable to keep in alphabetical order. Closed, the file (which is really a box) presents the appearance of a portly volume. On opening the lid the front falls, and there appears a series of parchment diaphragms, lettered alphabetically. Papers to be preserved are dropped into their proper place, and the whole is held neatly together in order, though any single paper can be removed from top, middle, or bottom without disturbing any other. When full, or when a definite period is completed, the index can be removed from the box, packed away, and a new one substituted at a small expense. The invention is very convenient for business or for private purposes.

Trade Notes.

MESSRS. NEWBERRY & SONS are wholesale agents for the carbonated fluid magnesia and the concentrated lemon syrup, prepared by Messrs. William Corry & Co., of the Omac Springs, Belfast, which, without being novelties, are excellently-made pharmaceutical preparations.

MESSRS. DOMEIER & Co. have printed as a circular an interesting lecture on "Peroxide of Hydrogen," delivered by Dr. P. Ebell before the Branch Society of German Engineers at Hanover. It gives details of the use of this article in bleaching hair, feathers, silk, ivory, and bone, and for medicinal purposes.

WE mentioned recently the preparations of *Euphorbia Pulifera* as a remedy for asthma introduced to English pharmacists by Mr. Ingham, of Rockhampton, Queensland. Mr. Penrose, of Reading, now introduces another preparation of the same herb, prepared by Messrs. Acheson & Allen, of Rockhampton. Mr. Penrose is also agent for the American diabetic "Glenn mineral water."

A COMPANY has been formed to work the "Tannic Black." Patent tannic black is a product of leather-waste, oilings, &c., and can be worked up into a blacking which is said to have very superior qualities. The especial recommendation of this blacking will be that it contains no acid. The business is to be worked by Messrs. Wilkes Brothers, of 2 Change Alley.

WE have received a sample of Tyrer's Borough ketchup, which, it will be found, is advertised at a remarkably low price. After careful examination we can discover no appreciable difference between this product and that usually sold at three or four times the price. Chemists ought not to go on paying the fancy price unless they are satisfied that they are getting equivalent value.

MESSRS. KINMOND & Co., of Leamington, have produced a series of new drinks for the summer, put up in the popular champagne style, and each bottle packed in a straw envelope. Their special novelty is Fruity Champagne, a light champagne beverage with plenty of "go" in it, and very pleasantly flavoured. Their Orange Champagne and Aromatic Ginger Ale are drinks in similar style, and with distinctive flavours which will certainly be appreciated by connoisseurs of temperance drinks. For those who want invigorating they also supply their sparkling Phosphorett.

THE approach of Easter offers another opportunity for the perfumery trade. Mr. Rimmel is ready with a large variety of "eggs" in porcelain, metal, wood, or fancy straw-work, each containing some little toilet luxury. He also has a most elegant variety of sachets and cards with appropriate religious emblems and legends.

MESSRS. FLETCHER, FLETCHER & STEVENSON, of the North London Chemical Works, have issued in neat and novel style a pamphlet for the pocket, entitled "Memorabilia," evidently intended especially for the use of medical practitioners. It contains a table of doses of patent medicines and other information, and a number of blank pages for memorabilia, all in addition to full details of Fletcher's concentrated liquors and Fletcher's syrups of the hydrobromates.

CARRICK'S RUSSIAN CONDENSED MARES' MILK COMPANY (LIMITED).—This company proposes to condense mare's milk in Russia, and to prepare the same for export to England and other countries. It was registered on the 11th ult., with a capital of 20,000*l.*, in 50*l.* shares, the following being the subscribers:—John Hollingshead, author, journalist, and theatrical manager, 14 Pall Mall, 1 share; Colonel F. A. Wellesley, Marlborough Club, 1; G. L. Carrick, M.D., Physician to the British Embassy, St. Petersburg, 1; G. Mander Allender, Roehampton, Surrey, managing director of the Aylesbury Dairy Company (Limited), 1; Robert Farquharson, M.D., M.P., 2 Porechester Gardens, Bayswater, 1; Alfred Morrison, 16 Carlton House Terrace, 1; Walter John Coulson, F.R.C.S., 17 Harley Street, W., 1 share. In lieu of special articles, Table A of the Companies Act, 1862, will apply, and in accordance therewith the subscribers will appoint the first directors, and act *ad interim*.

THE ZOEDONE COMPANY.—An extraordinary meeting of the shareholders in the Zoedone Company (Limited) was held on February 13 at the City Terminus Hotel, Cannon Street, under the presidency of Captain C. Noel Hoare, R.N. The chairman explained that the meeting was called for the purpose of altering the memorandum of association, and that could only be done by registering a new company, in order to enable the company to deal in mineral waters other than zoedone, which at present it could not do. The board had acquired from the Government of Prussia the exclusive right to import and sell the celebrated natural Seltzer water and other Government water from the Royal springs as distinct from Seltzer water. The company would still trade in zoedone, but the board thought a large additional profit could be made, and the company be developed into the largest and most important natural mineral-water merchants in the United Kingdom and the Colonies. There were many advantages to accrue, among which was the fact that natural Seltzer mineral water would go into France and the United States practically duty free, as the manufactured water paid a duty of 40 per cent., and natural mineral water was subject to a duty of only 10 per cent. He moved formal resolutions giving the necessary powers. Mr. Hume Webster, in seconding the motion, said that the concession practically cost the company nothing. It simply paid for as much water as it sold. The water would be bottled by the employes of the Prussian Government direct from the spring. After some discussion, the resolutions were unanimously agreed to.

THE ZOEDONE COMPANY.—Objects: The reconstruction of the Zoedone Company, so as to enable them to purchase and resell as agents all kinds of mineral waters and the products thereof. Capital 100,000*l.*, in 1*l.* shares. *Signatories* (with one share each): *Captain C. N. Hoare, R.N., 8 Bolton Street, Piccadilly; *F. Moreton, 64 Elm Park Road, Chelsea; *H. Bayley, Teddington; C. C. Holmes, 5 Bevington Road, Westbourne Park; *J. H. Webster, 23 Abchurch Lane; J. E. Hodges, 25 Abchurch Lane; A. T. O'Sullivan, 115 Grafton Road, Camberwell. E. Barker is also a director. Qualification, the holding of 1,000 shares. Remuneration, 100*l.* each per annum, and a gross sum of 5 per cent. upon the amount of divisible profits of the company. February 28, by Messrs. F. Heritage & Co., Clement's Lane.



The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, 4 South Street, Finsbury, London, and at Paris and Brussels.]

Applications for Letters Patent :—

- Animal Charcoal.**—No. 808.—J. G. Macfarlan, of Richmond. Improvements in apparatus for the manufacture of animal charcoal, and the better treatment of the bye-products resulting from the destructive distillation of bones and other organic matter. Dated February 20, 1882.
- Beverage.**—No. 612.—R. R. Carew. A communication from E. B. Sladen, R. McLeod, and C. H. White, all of Akyab, British Burmah. The manufacture or treatment of Dangway beans or seed, otherwise known as the *Cassia Tora*, so as to make a beverage similar to coffee or like drink. Dated February 8, 1882.
- Bleaching.**—No. 549.—P. Thomas, of Elberfeld, Germany. Improvements in bleaching fibre, fibrous matter, yarn, or woven fabrics without the employment of chlorine or chloro. Dated February 4, 1882.
- Bleaching, &c.**—No. 653.—J. Young, of Kelly, Renfrewshire, North Britain. Improvements in the production of compounds capable of being employed for bleaching and other purposes. Dated February 10, 1882.
- Bleaching, &c.**—No. 785.—J. B. Hutcheson and J. J. Dobbie, both of Glasgow, chemists. Improvements in treating textile fabrics and materials in order to bleach or remove colour, or to apply or brighten colour generally or topically, and in apparatus therefor. Dated February 18, 1882.
- Capsules.**—No. 611.—E. Belmer, of Cambridge Terrace, Islington, London. Improvements in ornamental and trade-mark capsules for bottles, jars, and other like receptacles, and in machinery or apparatus for facilitating the application of various colours thereto. Dated February 8, 1882.
- Cases for Bottles.**—No. 738.—J. Ferguson, of Ashton Keynes, Wiltshire. Improvements in cases or receptacles for containing and protecting bottles of aerated water or other liquids, and in the means for drawing off the contents of the said bottles without removing them from the cases or receptacles. Dated February 15, 1882.
- Clarifying and Preserving Fruit Juices.**—No. 530.—S. C. Davidson, of Belfast. Improvements in the clarification and preservation of the expressed juices of fruits. Dated February 3, 1882.
- Clarifying and Preserving Vegetable Infusions.**—No. 529.—S. E. Davidson, of Belfast. Improvements in the clarification and preservation of certain vegetable infusions or decoctions. Dated February 3, 1882.
- Colouring Matter.**—No. 814.—C. D. Abel.—A communication from Dr. E. Jacobsen, of Berlin. An improved manufacture of colouring matter for dyeing and printing. Dated February 20, 1882.
- Colouring Matters.**—No. 627.—J. A. Dixon.—A communication from Dr. C. Koenig, of Hühst-am-Main, Germany. Improvements in the production of colouring matters suitable for dyeing and printing. Dated February 9, 1882.
- Concentrating Milk.**—No. 554.—F. Springmuhl, M.D., Ph.D., of Gower Street, London. An improved method of and apparatus for concentrating milk. Dated February 4, 1882.
- Dry Antiseptic Non-hygroscopic Powder.**—No. 663.—N. Bradley Hulme, Manchester. The manufacture of a dry antiseptic non-hygroscopic powder from a liquid extract of sapouin, suitable and convenient for commercial purposes; to be used in the washing and scouring of silks, and for preserving and giving finish to flat liquids. Dated February 11, 1882.
- Dyeing.**—No. 557.—F. A. Gatty, of Accrington, Lancashire. Improvements in dyeing cotton yarns, or yarns of other vegetable fibre, in the cop, or on bobbins. Dated February 4, 1882.
- Dyeing.**—No. 757.—G. W. von Nawroeki.—A communication from G. Fagenburgh, jun., of Rydholm, Sweden. Improvements in the process of dyeing cotton yarns and threads. Dated February 16, 1882.
- Filter-presses.**—No. 923.—H. E. Newton. A communication from A. L. G. Dehne, of Halle-on-the-Saal, Germany. Improvements in filter-presses. Dated February 25, 1882.
- Ice.**—No. 954.—C. D. Abel.—A communication from Messrs. Osenbrück & Co., of Hemelungen, Germany. Improvements in apparatus for the production of ice. Dated February 27, 1882.

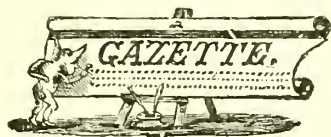
- Indelible Ink.**—No. 728.—Dr. W. Reissig, of Munich, Bavaria. Improvement in the manufacture of an indelible ink for printing, stamping, and writing. Dated February 15, 1882.
- Lined Valve Cases, &c.**—No. 924.—H. E. Newton.—A communication from A. L. G. Dehne, of Halle-on-the-Saal, Germany. Improvements in the manufacture of lined valve cases, cocks, pump-bodies, and other hollow pieces intended to resist chemical action. Dated February 25, 1882.
- Medical Injecting Apparatus.**—No. 655.—H. A. Bonneville.—A communication from J. A. Joltrain, of Trocadero, Passy, France. —A new or improved medical injecting or irrigating apparatus. Dated February 11, 1882.
- Mineral Teeth.**—No. 845.—B. J. Bing, dental surgeon, of Paris. Improvements in the shape or form of mineral teeth. Dated February 20, 1882.
- Obtaining Ammonia.**—No. 829.—J. Addie and J. Addie, both of Glasgow. Improvements in obtaining ammonia from furnace-gases and from the blast or other furnace, and in the process or modes and means employed therein. Dated February 21, 1882.
- Preserving Milk.**—No. 717.—J. H. Bibo.—A communication from E. Scherff, of Wenisch-Buchholz, near Berlin. Improvements in the preservation of milk, and in means or apparatus employed therein. Dated February 14, 1882.
- Purifying Anthracinone, &c.**—No. 753.—J. A. Dixon.—A communication from J. Bröner, of Frankfurt-on-the-Main, Germany. Improvements in the process of purifying anthracinone and alizarines and in apparatus for effecting the same said process and apparatus, being also applicable to the purification or crystallisation of other substances. Dated February 16, 1882.
- Purifying and Discolouring Saccharine Liquids.**—No. 657.—H. J. Haddan.—A communication from H. Tietz, of Brunswick, Germany. An improved process of purifying and decolourising saccharine liquids. Dated February 11, 1882.
- Recovering Soda.**—No. 798.—H. C. F. Störmer, of Paris. Improvements in means of, and apparatus for, recovering soda used in making wood-pulp stuff and other similar matter. Dated February 18, 1882.
- Solid Lye Composition.**—No. 812.—W. H. Beck.—A communication from C. M. Lévy and G. Alexandre, both of Paris. Improvements in the manufacture of solid lye composition for washing and bleaching linen, and for other purposes. Dated February 20, 1882.
- Spinal support.**—No. 957.—G. E. Vaughan.—A communication from P. J. Le Bellegue, of Paris. An improved spinal-support. Dated February 27, 1882.
- Stopping Bottles.**—No. 591.—W. R. Lake.—A communication from C. Renauld and M. B. Stafford, both of New York, United States. An improved device for securing stoppers or covers in or upon bottles or other like vessels. Dated February 7, 1882.
- Sulphate of Alumina.**—No. 732.—W. Gentles, of Widnes, Lancashire. Improvements in the manufacture of sulphate of alumina. Dated February 16, 1882.
- Sulphate of Ammonia.**—No. 921.—J. Dempster, of Elland, Yorkshire. Improvements in the method of and apparatus for the manufacture of sulphate of ammonia, chiefly adapted for small gasworks. Dated February 25, 1882.
- Urethral Syringes.**—No. 741.—A. M. Clark.—A communication from F. Wilhöft, of New York, United States, physician. Improvements in urethral syringes, and in the method of and apparatus for manufacturing the same. Dated February 15, 1882.
- Water-filters.**—No. 803.—F. O. Ross and A. Saint-Clair Buxton, of The Grove, Hammersmith, London. Improvements in water-filters. Dated February 20, 1882.

Specifications published during the month :—

Postage 1d. each extra.

1586. G. M. Allender. Preservation of alimentary substances. (Not proceeded with.) 2d.
1716. J. Storer. Obtaining ammonia. (Not proceeded with.) 2d.
2238. I. A. Best. Manufacture of respirators. (Not proceeded with.) 2d.
2630. J. Massey. Stoppers for aerated-water bottles. 4d.
2664. W. Jamaiker. Compressed food for cattle. (Not proceeded with.) 2d.
2814. W. H. Beck. Machine for manufacturing envelopes for bottles. 6d.
2859. J. E. Dowson. Manufacture and treatment of gas, &c. 6d.
2868. P. Jensen. Manufacture of printers' ink. (Not proceeded with.) 2d.
2882. R. G. Perry. Preparing vegetable substances for brewing and distilling, &c. 4d.
2890. W. A. Barlow. Bleaching animal and vegetable fibres, &c. 6d.
2891. H. J. Smith. Apparatus for effecting the separation of solid bodies from each other. (Not proceeded with.) 4d.
2899. C. H. Von Ulmer. Apparatus for facilitating the discharge of liquids without disturbing the sediment, &c. (Not proceeded with.) 2d.

25. I. A. Bonneville. Composition of matter for preventing and removing incrustations in boilers. 2*d*.
 26. W. R. Lake. Producing multiple copies of writing, drawings, &c. (Not proceeded with.) 2*d*.
 27. L. A. Groth. Preparing textile materials with chemical solutions of silk, wool, or feather down, or mixtures thereof. 4*d*.
 28. M. Immisch. Thermometer. 6*d*.
 29. G. F. Redfern. Eyeglasses. (Not proceeded with.) 4*d*.
 30. T. B. Gibson. Apparatus for working celluloids or other material for fixing artificial teeth. (Not proceeded with.) 2*d*.
 31. J. W. Bottomley, and R. F. S. Molesworth. Manufacturer of chlorate of soda. (Not proceeded with.) 2*d*.
 32. J. McEwen and S. Spencer. Condensing pumps and cylinders for manufacture of aerated waters. 6*d*.
 33. C. M. Scott. Disinfecting apparatus. 6*d*.
 34. W. R. Lake. Disinfection or purification of alcohol obtained from beetroot or molasses. 4*d*.
 35. J. Long. Manufacture of food for horses and cattle. 2*d*.
 36. C. Kempster. Aerated beverage, &c. (Not proceeded with.) 2*d*.
 37. T. P. Richardson. Manufacture of bottles, decanters, &c., from glass. 2*d*.
 38. F. Versmann. Treatment of soap lyes for the separation of glycerine therefrom. 2*d*.
 39. C. Farrow. Corking machines. 6*d*.



LIQUIDATIONS.

40. J. JOSEPH EDWARD, Watton, chemist and druggist. March 2.
 41. NATHANIEL, Ashby, near Brigg, chemist and druggist, and grocer and provision dealer. March 1.
 42. JOSEPH, 1 Priory Road, Anfield, and 8 Russell Street, Liverpool, chemist and druggist. February 15.
 43. ER, GEORGE, & PARKER, GEORGE, JUN., 181 Wardour Street, Soho, trading as James Rea & Co., manufacturing chemists. February 28.
 44. HAM, ALBERT EDWARD, Bridge Street, Llanelly, chemist and druggist, and wine and spirit merchant. March 2.
 45. E. JOHN HENRY, 82 Atlantic Road, Brixton, chemist. February 11.

PARTNERSHIPS DISSOLVED.

46. S & Co., Royal York Crescent, Clifton, Bristol, pharmaceutical chemists. October 21. (James Walter White and Alfred Driver.)
 47. THINSON, JOHN, & Co., Widnes and Liverpool, manufacturing chemists and dealers in chemicals. December 31. (John Hedley, James Young, Henry Branner, and George Pryde.) Debts by Hedley.
 48. MAIR, FRANÇOIS, & HICKS, RIVERS, Ingram Court, Fenchurch Street, drug and colonial agents and merchants. February 8. (Joseph François Le Mair and Rivers Hicks.)

COMPANIES ORDERED TO WIND-UP.

49. ZER NATURAL MINERAL WATER COMPANY (LIMITED), January 23, by Justice Kay. Off. Liq., F. Maynard, accountant, 14 Queen Victoria Street.

Medical Gleanings.

THE TREATMENT OF GONORRHOEA.

GONORRHOEA is certainly somewhat more obstinate in acute, strumous, lithic, and syphilitic persons, but it is really curable under proper treatment in almost all. The variety mentioned arises very largely from the barbarous habit of associating the word gonorrhœa with copaiba and leucobes, and dosing all patients alike, off-hand, with these useless drugs.

These facts form the key to the whole difficulty:—(1) The use of "specifics" have no beneficial effect upon gonorrhœa in the acute stage. (2) Upon the sub-acute stage they have this result, viz., they abolish scalding, and sometimes chordee, and render the urine bland, the discharge one, perhaps, continuing. (3) They do all the good that they are capable of doing in from two to four days. They render the organism insusceptible of their beneficial effect for several weeks after their exhibition.

From these facts we may infer that to exhibit "specifics" before the scalding and chordee have entirely ceased is prematurely to play "the trump card," and so in exchange for a transient advantage, to render the case obstinate. The greater number of obstinate cases are the result of the indiscriminate and premature use of "specifics." "Specifics" should not be employed until after scalding and chordee have entirely ceased, when they will in many cases act with wonderful rapidity. In obstinate cases, it is well to put "specifics" aside for some weeks, and then to exhibit them suddenly.

The line of treatment suggested for an ordinary case of gonorrhœa, when seen from the commencement, is as follows:—

Acute stage: 20 grain doses of potass. bromid. in mist. camph., with the application of hot-water fomentations. The chordee may be met by a combination of chloral with the mixture above mentioned, and scalding-hot fomentations at bed-time. In Paris, moreover, a cotton reel is often bound over the spine with a piece of tape passed round the waist.

Sub-acute stage: as above, but less active.

Chronic stage (where there is neither pain nor chordee): Copaiba, followed by or alternated with cubebis. It is desirable not to combine the two, for in many cases where copaiba is beginning to fail while it is still evident that a "specific" is indicated, cubebis may with advantage be substituted if it has not been previously administered. The discharge may best be met by injections of a slightly astringent character, combined with a small quantity of liq. atropicæ.

Finally, so long as erection causes any pain, even though all other symptoms may have abated, it is right not to regard the disease as cured, scarcely even as chronic.—*Midland Medical Miscellany*.

DEFINITIONS.—M. Adrien Decourcelles, in the *Praticien*, gives a "Petit Dictionnaire de Médecine." Some of the definitions are very good. We select a few:—

Absinthe.—The genius of those who have none, and the deathblow to the genius of those who have it.

Accoucheur (untranslatable).—Travailleur de la mère.

Cordonnier (shoemaker).—So called because he gives corns (donne des cors).

Credulity.—The dysentery of faith.

Guillotine.—A little skylight opening on eternity.

Indigestion.—Memories and regrets.

Laurel.—A narcotic which destroys repose.

DIAGNOSING PUSTULES.—The State physicians and sanitary authorities of Illinois, U.S., are coming in for a good bit of ridicule. The story told is that a certain man named Todd, "well known to the police," was captured some considerable time back, and brought before the Court on a charge of horse-stealing. Todd, on one pretence and another, got his trial frequently postponed, but about the middle of last year the final trial was taken, and Todd was found guilty. Then he made a sort of confession, and professed to be able to give information of value concerning his associates. He was kept in jail, but sentence was deferred in the hope of inducing him to peach. A little while after Todd began to sicken, and before long pustules appeared. Dr. Jones, who first saw him, prescribed for measles, but Dr. Palmer, who seems to have been the authorised jail doctor, diagnosed smallpox, and prescribed accordingly. About then Dr. Ranch and Dr. Dixon visited the jail, and were invited to examine the patient. After duly sucking their gold-headed canes, both voted "smallpox." Every precaution was therefore taken, and Todd was removed to the pest-house, where he was placed in charge of Dr. Stanley. A few days afterwards Dr. Stanley presented himself to the authorities of the jail to report that his sick patient had disappeared in the night, and had left behind him a bottle which had evidently contained croton oil; and then the faculty concluded (they knew enough for that) that the pustules were croton oil products, and the sickness was feigned. After Dr. Stanley, a citizen came along to report that he had lost a horse on the night of Todd's escape, and the active and intelligent officers of the police put one and one together, and concluded that Todd and the horse had probably gone the same road, likely enough in company. No tidings of either had subsequently been obtained.

Exchange Column.

ADVERTISERS IN THE EXCHANGE COLUMN will find it very much to their advantage to draw up their announcements so that they will fall naturally into one of the divisions into which the advertisements are grouped.

We would also suggest that those who avail themselves of the Disposal section will be wise to define, with some approach to detail, what they have to sell. Probable purchasers are too busy, in most cases, to enter into preliminary correspondence, which is likely enough to have no ultimate result.

TERMS.—Announcements are inserted in this column at the rate of one halfpenny per word, on condition that name and address are added. Name and address to be paid for. Price in figures counts as one word.

If name and address are not included, one penny per word must be paid. A number will then be attached to the advertisement by the Publisher of THE CHEMIST AND DRUGGIST, and all correspondence relating to it must be addressed to the "Publisher of THE CHEMIST AND DRUGGIST, Colonial Buildings, Cannon Street, London, E.C.," the envelope to be endorsed also with the number. The Publisher will transmit the correspondence to the advertiser, and with that his share in the transaction will cease.

Deposit of Money.—In order to ensure safety we offer the following system:—The purchaser of anything advertised in the Exchange Column may remit the amount to us. We shall acknowledge receipt to both parties by post-cards, and shall only pay it away on the advice of the remitter. Whether returned to him or paid to the seller, we charge a commission of 6d. on any transaction of 3l. or less, or 1s. if above that amount.

Dental and Surgical.

Good water-laid for sale, 5 feet 8 inches long, 3 feet wide; cost 7l., take 4l. Baker, 41 Dour Street, Dover.

First-class medical-coil, unusually powerful, complete with battery, regulator, &c.; quite new and perfect; cost 3l. 10s., price 2l. Kay, Crewe.

Dental stopping-case, containing 62 new excavating, scaling, and stopping instruments of best American and English recent patterns, including new best pattern automatic mallet and points, cost 7l. 7s., cash 4l. 4s. Headland & Co, Chemists, Brighton.

Drugs and Chemicals.

10 1 oz. Howard's quinine, 4l. 10s.; three bottles Hotchkiss's oil peppermint, 10s.; (deposit). 16s. 20.

Ether sulph. rect. 745, 46 1-lb. bottles; offer wanted, cash or exchange. W. H. Willson, New Shoreham.

Pulv. rhei. E.f. opt., splendid for Gregory powder, &c., 3s. per lb. only, in bottles (carriage paid on quantity); offers for pulv. scillar opt., 10 lbs., in best condition. Alexander, Chemist, Edinburgh.

Proprietary Articles.

Horniman's tea, in packet, about 40 lbs., salable qualities, quite fresh, cheap. Leath & Ross's Homoeopathic, 3l. 3s. size, new and nearly full, cheap; also a quantity of useful patents; send stamp for list. G. Woolley, Chemist, Leicester.

One doz. Rumsey's 1s. plate powder, 5s.; 1 doz. Rumsey's 6d. ditto, 2s. 6d.; 1 doz. Rumsey's 1s. powder for steel, 5s.; 1 doz. Rumsey's 1s. polishing paste, 4s.; 1 doz. Rumsey's 6d. ditto, 2s. 6d.; 1 doz. Rumsey's 1s. furniture polish, 5s.; all in perfect condition. 15 15s.

Apparatus.

A 21 5-grain mahogany pill machine; good condition, 11s. T. Chivers, 72 High Street, Guildford.

Drug-mill, Kernick's, only used a few times, too small for my use; 2l. or exchange for a cleable patents. W. Hedges, Dale End, Birmingham.

A complete lot of chemical apparatus and material suitable for forming an experimental laboratory for a student's use. List of contents on application to Spring & Bell, Chemists, Drigg.

Strong white glass taps, straight or bent, suitable for sulphuric or nitric acid, mounted ready for fixing to any receptacle where acid is stored. Particulars and price on application. W. J. Jackson, 4 Regent's Terrace, Hull.

Educational.

Set of illegible autograph prescriptions (original), 2s. 6d.; 30 prescriptions (catch and difficult) given to dispense at Minor during past 12 months, 2s.; 50 questions asked of successful students at last Minor, 1s. 1d.; lot of cheap, almost new, books, stamp for list. Saunders, 130 Camden Road, N.W.; note change of residence.

Literature.

Pharmaceutical Journal, 1881, complete; offers journal post free Mondays 3s. quarter. Harvey, 23 High Street Ilfracombe.

Chemist and Druggist for 1879, 1880, 1881; Blackie's "Cyclopedia," 33 parts, unbound. Offers wanted. Lindsey, Rochdale.

Fowne's "Chemistry," Dentley's "Botany," two different editions of Attfield's "Chemistry." What offers? must be sold Dyson, Chemist, Baeup.

Chemist and Druggist, 1871-1881 inclusive; all complete except February and June, 1872. October and November, 1875; n'so "Year-book of Pharmacy, 1874 80, inclusive; quite clean; what offers? Mark Cooper, Church.

"British Flora-Medica," published 1877 at 30s., quite new, for 16s. 6d.; an admirable work, in which each plant is illustrated in colour from nature. Also, a 10-guinea binocular microscope, with eye-pieces and objectives, in cabinet, complete for 5l. Wild (late Siebold), 225 Oxford Street, Manchester.

Thomas's "Practice of Medicine"; Smith's "Students Latin Grammar"; *Pharmaceutical Journal*, bound, 1856-57, 1858-60; Valpy's "Latin Delectus and Grammar"; Horsley's "Toxicologist's Guide"; Coe's "Structural Botany"; "Cosmos," with vocabulary; *Pharmacopoeia of College of Physicians for 1788 and 1836*; British *Pharmacopoeia*, 1874; Latin Dictionary, Otto's "French Grammar." What offers? Vickerman, Worcester Street, Kidderminster.

Soda-water Plant.

Soda-water machine, first class, with bottling-rack, complete, 45l.; warranted. Chemist, 34 High Street, Putney.

Barnett & Foster have some second-hand soda-water machinery of their own make for sale. Apply 23r Forston Street, Shepherdess Walk, N.

Fifty pounds, all at.—Vertical combined steam-engine and boiler, self contained; soda-water machine, gas work; large condenser; gauges; corking rack; filling machine for patent bottles; all mountings in good condition; seen at work by appointment; second hand; recipe, &c., included, 400 dozen daily. Particulars, N. G. Wilcocks, Bath.

Forty pounds.—Second-hand American principle soda-water machine, by Davison; two washers, gauge, rocker, 12-gallon cylinder, charging-pipe; 300 dozen daily; reepee, directions. A Wilcocks's filling machine. A complete plant. Particulars, N. G. Wilcocks, Bath.

Shares.

Five 14. shares Chemists' Airedale Waters Association; highest cash offer accepted. Sweetman, Wigan.

Shop Fittings.

Gallon tincture-press, as fig. 20 Maw's list, 15s.; "You Dirty Boy," cost 4 guineas, sell for half. Casely, Camden Town.

The entire fittings of five chemists' shops for disposal, price 40l., 47l., 55l., 80l., 120l. Lloyd Rayner, 333 Kingsland Road, London, N.

Two nests, containing 42 drawers, polished yellow pine, gold labels, glass knobs, with shelving to match, nearly new; will sell at half price, 6l. Apply to J. Richards, Chemist, Aberdeen.

Immediate Disposal.—Fittings of a chemist's shop, by Treble & Son, cost 200l. five years ago; no reasonable offer refused; rare opportunity. Chemist, 2 High Street, Sandy, Bedfordshire.

Window attraction and curiosity, very handsome model electro-magnetic pumping engine with battery, marvel of mechanical ingenuity, pumps a continual stream into and from the same basin, quite new and perfect, cost 5l.; price 3l. Kay, Chemist, Crewe.

Shop-drawers with gold and glass labels, wall cases, counters with and without drawers, window-enclosures, shelving, shop bottles and jars, carboys, specie-jars, &c. outside shop-lamps with brackets and every description of fittings and utensils. Lloyd Rayner, 333 Kingsland Road, London, N.

Scales, analytical, fine box-end beam, on alide pillar, with weights 1,000 grains down to one-tenth, as fig. 76 Evans' (Liverpool) list, quite new, carriage paid, 40s. Dickle, St. Georges, Wellington, Salop. Through address being printed wrong, replies to last month's advertisement returned to Dead Letter Office.

To Chemists commencing business or requiring fittings. A quantity to be sold, a bargain, including specie-jars, opal vases, 2 feet high, exquisitely painted, counter and window glass cases, nests of drawers, Spanish mahogany fronts, shop-bottles, &c.; parties requiring should inspect the above. Apply to Mr. Merrick, Castilian Street, Northampton.

20 doz. good shop-rounds, average price 7s. 6d. per doz.; a quantity 4 lb. and 6 lb. white jars, japanned covers, in first-rate condition, 12s. doz.; 8 lb. brown ditto ditto, 15s.; a quantity glass-capped ether bottles, from 2 oz. to 10 oz., 33 per cent. under Maw's price-list; iron mortars; Wedgwood mortars; tincture-press, almost new, 1 gall. 25s. E. Natali, 297 Old Street, Shoreditch end, London. All numbers refer to Maw's new list.

Nearly new nests of drawers and shop rounds, store bottles, shop jars, show bottles and specie jars, desks glazed, cases counter and wall, lamps and irons, dispensing screens, shelving, counter-cases for cigars, tobacco jars, two mahogany doors embossed glass, sheet plate-glass in mahogany frames 5 ft. 10 1/2 high, 4 ft. 10 1/2 wide, scales, medical books, surgical and tooth instruments, 4 oz. eau de Cologne bottles 9s. gross, and various shop-fittings, all cheap, to clear out. 810 Old Kent Road.

some window show-carboys, specie-jars; very cheap. J. Allen, Chemist, Plymouth.

Glass counter-cases, equal to new, as fig. A 8, 5 ft. long, 6 ft. 10s.; 6 ft. long, 7 ft.; do. 10, 8 ft. long, 8 ft. 10s.; 3 ft., as fig. A 3, 40s.; 1 ft. long, 50s.; as fig. A 16, 3 ft. long, 60s.; 3 ft. 6 in. long, 70s.; 4 ft., as fig. A 17, 85s.; as fig. 99, 5 ft. 8 in. long, 7 ft.; bent plate-glass tooth-brush case, 30s.; do. do., fig. A 9, 60s.; also several others; a number of plate-glass wall-cases, from 4 ft. long, very cheap; cigar-case, fig. A 33,; 8-ft. bent plate-glass counter-case, 81. E. Natali, 207 Old Street, Shoreditch. All numbers refer to Maw's new list.

nest drawers, with fixtures and shelving over, 17 ft.; 12 ft. fixture, as Maw's fig. A 84, bevelled, glass labels, all equal to new, 16 ft.; 10 ft. fixture, drawers, shelving, lockers, and cornice complete, 10 ft.; glass wall-case, with cupboard under; 17 ft. mahogany-top counter, fitted with drawers the entire length; a 6 ft. mahogany counter, plate-glass cases in front, equal to new, 7 ft.; a quantity shop drawers, mahogany fronts, gold labelled, from 1s. 6d. per drawer; good deal-fronted ditto, at 1s. per drawer. E. Natali, 207 Old Street, Shoreditch. All numbers refer to Maw's new list.

counter, mahogany top full of drawers, return for same, 5 ft., 70s.; counter, 12 ft., 80s.; ditto, 11 ft., 40s.; ditto, 6 ft., 30s.; dispensing-screens, 4, 5, 6, and 7 ft. long, 55s., 90s., 115s., and 120s.; wall-case, 6 ft. long, 10 ft., 10 ft. long, 6 ft.; several others also; case, as Maw's figure 8, 30s.; bent-front case, 3 ft., 40s.; 5 ft., 57s. 6d.; 7 ft., 41.; lot of globes, some very large, 12, 14, 16, and 18, gallons, half price; case and desk, 40s.; two gilt eagles; about 200 rounds, various, 65s. the lot; several sets of ointment jars, specie jars, stands, scales, pill-machines; several lots of shop-drawers from 9d. each. Tomlinson, Druggists' Shop Fitter and Valuer, 15 St. Paul's Square, Birmingham.

glass counter-cases, 6 ft. long, fig. 97; 8 ft. long, fig. 98; 4 ft. long, fig. 96; 9 ft. 6 long, fig. 104; 6 ft. long, fig. 105; 3 ft. 6 long, fig. 43; 4 ft. 1 long, fig. 73; 4 ft. long, fig. 40; 3 ft. long, 3 ft. 6 long, 4 ft. long, 4 ft. 6 long, 5 ft. long, 6 ft. long, 7 ft. long, fig. 163, 164, 165; four handsome dispensing-screens, with cases at each end, and mirror-centre, &c.; tooth-brush cases, as fig. 52 and 72; sponge-cases, as 90, 92; soda-water stands, as 63; desks, fig. 37; upright cases, with desks, fig. 13 and 21; two 3 ft. long 2 ft. wide plate-glass show-cases on stands, for centre of shop, &c.; quantity exhibition show-cases, &c.; show-stands, as fig. 19 and 54; 9 ft. 6 long, 10 ft. long mahogany glass-case fronted counters, as fig. 136; above numbers refer to Maw's old list. Lloyd Rayner, 333 Kingsland Road, London, N.

te-glass sponge case, fig. A 41, 65s.; do. do., fig. A 43, 51.; desk and glass case, fig. A 32, 65s.; 4-ft. 6-in. dispensing-screen, with tablet on top, plate-glass doors, and polished mahogany, 90s.; a 5-ft. do., do., 51.; 6-ft. do., do., do., 61.; 3 very elaborate dispensing-screens, 5 ft. long, 6 ft. long, and 7 ft. long, fitted with a plate-glass case at each side, with silvered plate-glass centre, with marble slab in front, surmounted with tablets, &c., "Dispensing Department," fitted inside cases, with silvered-glass backs and shifting shelves, also fitted at back with three shelves for dispensing bottles, each 81. 10s.; very elaborate specie jars, royal arms, &c., 80s. a pair; opaque jars, elaborately labelled, glass gold covers, fig. D, equal to new, 8s. each, worth 12s. E. Natali, 207 Old Street, Shoreditch.

20 nests of mahogany-fronted chemists' drawers, French-polished and fitted with glass knobs, in nests from 2 feet to 12 feet long, price from 2s. per drawer; over 200 feet mahogany-edged shelving; mahogany-top counters; desks and cases, and other chemists' fittings; large centre-table case, suitable for chemists, grocers, perfumers, cost 801., cash price 81.; handsome dispensing counter, cost 401., price 251. Apply, B. & G., 22 Gun Street, Brushfield Street, Bishopsgate, London.

2 ft. long, 4 ft. long, 6 ft. long, 8 ft. long, 10 ft. long, and 12 ft. long mahogany-fronted, dovetailed drawers, glass knobs and bevelled edges, glass labels, 2s. 9d. per drawer; if with gold labels, 2s. 6d.; if with mahogany knobs, 2s. 3d. (some nests have two rows of small and two rows large drawers, and others three rows small and two rows large drawers); a number of mahogany cupboards from 3 ft. to 9 ft. long; deal painted lockers, from 4 ft. to 16 ft. long; mahogany-fronted shelving, any length; mahogany cornice, pilasters, and uprights for shelving; 50 mahogany-top counters; a mahogany-fronted counter, with circular end, a bargain; a 7 ft. wall-case, fig. A 86, 121.; a number of wall-cases, from 3 ft. 6 in. to 12 ft. long, very cheap; two mahogany wall-cases, 3 ft. long, 34 in. high, 35s. each; a mahogany wall-case, 3 ft. long by 28 in. high, 40s. Sketches, with descriptions, free. E. Natali, 207 Old Street, Shoreditch.

Formule.

Send for my list of recipes, 6d. each, six for 2s. 6d. "Chemist," care of J. Edwards, Wye, Kent.

"Entirely New Remedy for Toothache," gives instant ease, non-poisonous; "Nigerine," jet-black, waterproof patent blacking cheaper, sweeter, and better than Nubian; "Digestive Relish," best and cheapest sauce in creation, from 2s. gallon; "Lupuline Bitters," equal to American in every respect, one-third price; "Limes and Glycerine," elegant, creamy, snow-white, quite inseparable, pronounced best in market; "Foaming Dentifrice," resembles Floriline, costs one-eighth; "Rheumatic Embrocation," most excellent, cannot be surpassed in cheapness and efficacy; "Blood-purifying Powder" (London surgeon's recipe), popular spring and autumn remedy; "Anti-spasmodic Elixir," simple, reliable, always efficacious; "Camomile and Quinine Pills" for indigestion, &c., frequently preferred to Norton's; "Effervescent Depurative Saline," facsimile of Eno's, costs 10d. lb., entirely soluble, keeps well; "Cryptosymosis," certain speedy cure for gleet, &c.; "Mist. Gonorrhoea" (capivi), nauseous taste masked, unfailing remedy; Hair-restorer" (sine sulphur), clear, sweet, economical, confidently recommended; "Liver Pills" (vegetable), gentle action, always effectual; "Lavender Water," superb fragrance, lasting, equals Sainsbury's; "Occasional Pills" (for ladies), most reliable, preferred to Widow Welch's; "Essence for Deafness," simple and effectual; "Podophyllin and Taraxacum," pleasant taste, vastly superior to similar preparations; "Pile Powders and Ointment," cure and prevent hemorrhoids; "Quinine and Iron Tonic," bright and unchangeable, resembles Pepper's; "Worm Syrup," entirely vegetable, pleasant and rapid action; "Cattle Oils" (like Lindington's), guaranteed equal to any sold; "Glycerine Cough Liniment," truly invaluable, universally liked; "Ringworm Specific," certain rapid cure; "Tic Pills," unequalled in efficacy, many testimonials; "Chlorodyne," inseparable, perfectly soluble, quite equals Brown's; "Marking Ink," indelible, no waste, creditable to seller; "Fumigating Ozonic Ribbon," cheapest, sweetest, perfect disinfectant. All above guaranteed genuine formulae, are profitable, and may be honestly recommended with confidence. Price 1s. 1d. each, 3 for 2s. 6d., 25 for 11., post free, with full particulars for making, &c., by T. Brooks, Chemist, Louth, Lincs. N.B.—Detailed list sent post free. Recipes non-approved can be returned. I wish to give purchasers entire satisfaction.

Note 1 recipes, 2s. 6d. each.—Cherry tooth-paste, brilliantine (inseparable), neuralgia specific, hair-dye (ebony), cough pills, foot-rot ointment (infallible). H. Davies, Chemist, Maellyllth.

High-class horse and cattle spice, calf-rearing spice and poultry spice; bearing large profits; 10s. each, or 20s. for the three; for several years have enjoyed an extensive sale in Lancashire and Yorkshire, manufacture declining business. 144 2.

Fragrant foaming dentifrice (like "Floriline"); marking ink, sine silver (aniline), writing executed delicate chemicals; effervescent fruit saline (resembles Eno's); magic neuralgia drops (never-failing remedy); quinine and iron tonic (resembles Pepper's); lime-juice and glycerine (inseparable, white as milk); blue-black ink (non-corrosive, sine iron or galis); cherry tooth paste (never ferments, like Cornel's); brilliantine (inseparable, like Rimmel's); pill-coating (pearly white, no mangle or mastic used); glycerine jelly (perfectly transparent); crimson marking ink; hair-restorer (colourless, no deposit, sine silver); aromatic vinegar; toilet vinegar (as Rimmel's); plate-powder (like Stevens' "Silicon"); Oleum Flavum Cone, for pomades (colour stable); soluble essence ginger (like Hay's); corn solvent, clear (not acid); liquor copalite comp. c. bueli et matie (mixes clear with water); gonorrhoea paste, excellent (Dr. Ricord's); taraxacum and podophyllin (resembles Pepper's); with many others; send stamp for list, stating wants. The toilet preparations are identical with those prepared by a wholesale West-end firm; others equally good, all inexpensive to make; 5s. each (five for 11.). Readers are cautioned against cheap and worthless imitations. I was first to advertise formulae in this journal. Note change of residence, "Analyst," care of Mr. Barnes, 130 Camden Road, N.W.

Miscellaneous.

Arnold's desideratum, or knife and fork, combined, nickel-plated, 151s.

What offers for 30 2-gallon tins, had oak varnish in. Wilson, Lenton, Nottingham.

What offers? Strong 2-gallon tincture press on block, and 32-inch iron safe, fireproof. 168 10.

Devon tricycle, in perfect order, new last spring, bargain, 151. 15s. Apply Pieton Lodge, Thames Ditton.

Disposal. A few gross penny phosphorus paste, 4s. gross, sample free. 159 Meadow Street, Moss-side, Manchester.

Large quantity dispensing corks for sale, 54d. per gross; samples free by post. Jones, Chemist, South Stockton.

A quantity of blue poison, pomade and other bottles, demy, &c., for cash or exchange. Day & Co., 11 Rue Hill, S.E.

Sterling silver, hall-marked, marine decimal chronograph, centre seconds, jewelled, most accurate timekeeper, new, cost 31., 31 7s. only, genuine bargain. Gregson, Chemist, Blackburn.

Chemist and Druggist, nine years complete, 1871-1879, untound; also stock of good saleable pipes to be sold cheap; particulars on application. Evans, Chemist, Mortenhamstead.

In exchange for saleable patents, &c., a 56-lb. tin glycerine, specific gravity 1250, at 1s. 2d. per lb., and a 30-lb. case of beeswax, at 1s. 2d. per lb. Banner, 56 Boaler Street, Liverpool.

Job lines after stocktaking to be sold cheap.—About 2 dozen enemas of various makes (Higginson's, &c.) slightly soiled, but in saleable condition, 1s. each; 12 dozen assorted feeding-bottles to retail at 6d., 1s., 1s. 6d. each, 50s. the lot; 6 dozen trusses, travellers' samples, slightly soiled, 9s. doz.; about 2 gross stoppered bottles, N. M., assorted sizes, 4 to 8 oz., per dozen 2s. 6d. Mr. Roan, 4 Lucetta Road, S.E.

WANTED.

Dental chair, cheap. 163 4.

Patent and syphon bottles. 164 15.

"Dirty Boy," Habermann colossal bust. 167 13.

2 grain pill machine. J. P., 32 Swinley Road, Wigan.

One Maw's large leech aquarium, 16 in. Hagou, Chemist, Cardiff.

Bunsen's battery, 20 cells. Newman Holmes, Lavender Hill, S.W.

Homeopathic show-case, empty; particulars, size, and price, 163/22.
 Rackham's pills, any quantity, cheap. Floyd & Hicks, Bury St. Edmunds.
 Brass ear syringe, patents, extract belladonna; must be in good condition, 165/8.
 Three-grain pill machine; good condition. Price to White, Chemist, Nottingham.
 Fowne's "Inorganic Chemistry," last edition. Smith, 129 Dulwich Road, Herne Hill, S.E.
 Plate-glass tablet, "Dispensing Department," 6 feet or less. Particulars and lowest price, 167/15.
 Second-hand pill-machine, cheap, deposit approval. 159 Meadow Street, Moss-side, Manchester.
 133 Rackham's liver-pills, stamped; cheap for cash. Woodcock, Chemist, Magdalen Street, Norwich.

February numbers (1882) of *The Chemist and Druggist*, Publisher, C. & D., 44, Cannon Street, E.C.
Chemist and Druggist for February, March, April, May, October, 1880. Coates, Duke Street, Edinburgh.
 A good set of dental forceps, complete. State lowest cash price to Dens, 43 Tontine Street, Folkestone.
 Good paraffin-oil cistern; state size, price, and material made of, also if carriage paid, to S. Parker, 360 Leeds Road, Bradford.
 Pharmaceutical Latin Grammar, and pair dental excising forceps. Mr. Hall, 23 Alma Square, St. John's Wood, N.W.
 Tincture-press, patent screw preferred; saleable patents, drugs, and sundries; send list with lowest price. Alexander, Chemist, Edinburgh.

"You Dirty Boy" (statuette), exchange model electric pumping engine (see advt.); also superior electric bell, cost 25s. Kay, Crease, Botany—Aids, Cooke's, Balfour's "Anatomy," and "Systematic"; Hooker's "Primer," Chemistry—Aids, I., II.; Vacher's "Primer"; Kemstead's (enlarged); Roscoe's "Primer"; Buckmaster's "Elementary and Advanced." Prices to A. H. Hinde, Lowestoft.

ADDRESSES AND INFORMATION WANTED.

Maker of Neptune sea soap. 6/167.
 Whiting manufacturers, please quote prices to 72 242.
 The address of J. F. R. Lewis, Esq. Tall, dark complexion, high shoulders. A reward will be given. Woodward, Uttroeter.



THE Board of Trade returns for February indicate a continuance of general prosperity, but a serious diminution in chemical foreign trade. The total value of imports for the month amounts to 33,002,892*l.*, which compares with 36,646,270*l.* in February, 1881. Exports are valued at 18,935,994*l.* in February, 1882, against 16,835,550*l.* in February, 1881. An examination of the returns generally shows that the decline in the imports is mainly attributable to a heavy falling-off in the raw material of our cotton and woollen manufactures, while the improvement in the exports seems to be, to a great extent, due to an increase in the shipments of our native products, coal and iron. Several English manufactures, as cotton, woollen, and linen piece goods, mark a decline, and especially is this the case with chemical products. To that extent the figures cannot be regarded as hopeful for the industry of the country for the current year.

The statistics as regards chemical exports are as follows:—

	Feb. 1881	Feb. 1882
Alkali.. .. . cwt.	402,834	393,171
Alkali value	£127,973	£125,441
Other chemicals	£199,382	£134,954

The foreign trade in general chemicals, therefore, marks a decline of over 32 per cent. as compared with the same month of last year.

The chemical market shows no sign of the improvement which it was hoped would set in with the spring. Soda is much the same as last month. Crystals have been up to 63*s.* 9*d.*, owing to a temporary excitement in the Newcastle market consequent on the suspension of one of the large manufacturers, but that advance has been gradually lost.

As an indication of the very serious condition of the manufacture of heavy chemicals may be quoted the annual report of the Newcastle Chemical Works Company issued last month, which shows a loss on the year's working of over 15,000*l.* The following comparison of prices since the formation of the company in 1872 and at the end of last year is not without interest, as indicating the very serious depreciation in this important industry:—

	Soda Crystals	Soda Ash 52 per cent.	Bleaching Powder
	£ s.	£ s.	£ s.
Price per ton in January, 1872 ..	5 0 ..	11 0 ..	12 0 ..
" " December, 1881 ..	2 10 ..	5 0 ..	4 0 ..

Citric acid is dull, and can be bought at 1/2*d.* under nominal quotations. Tartaric has sold more freely, but is a fraction lower. Cream of tartar keeps firm. Oxalic acid: second-hand stocks being partially cleared out, one manufacturer has now almost the control of the market. His price has been advanced to 7*d.* net.

Sulphate of copper is rather easier; refined saltpetre is lower; borax firm, but not advanced.

BALSAM of capivi again tends higher in consequence of insufficient supply. Canada is selling at considerable advance. Peru is held for fancy prices, 14*s.* being the last quoted.

CASTOR OIL remains at late prices here, but advices from

Calcutta say that higher prices are firmly demanded for new contracts.

COD-LIVER OIL.—Respecting this product Messrs. Lars Brekke & Co., Hull, write to us on March 10:—The new season has commenced very unfavourably. The cod fisheries in Norway have, up to the present, when the advanced season is regarded, almost entirely failed, and as the cod this year contains unusually little liver it is already certain that the quantity will be much below an average. For this reason prices have during the last few days risen very quickly, and our present quotation is 5*s.* 9*d.* to 6*s.* 6*d.* per gallon according to quality, but even at these prices it is almost impossible at present to accept considerable orders. Tannery oils are also rising in value.

CUBERS.—150*s.* are asked, but they are not wanted at that rate.

CINCHONA.—The prices quoted in our list are those of the sales of Feb. 28, when there was marked dullness and a further general decline. Since then, however, the market has experienced a change. Large contracts for quinine for the Russian Government have been placed, and while the price of English has not altered, French and German brands have become fully 6*d.* per ounce dearer than they were at the beginning of the month. In fact, a very general impression seems to be getting hold of the market that after all the speculators for the rise will yet compel bark buyers to submit to their terms. It is supposed that the former have some information not generally possessed respecting the future supply of the cuprea bark, and it is understood that they hold a very considerable proportion of the stock of all the bark visible which is available for manufacturing purposes. The sales of the present week will in all probability indicate an advance in cinchona, and if any extraneous circumstances, such as a sudden demand for quinine, and a certain prospect of the early diminution of the supply should coincide, manufacturers might find themselves dependent all at once on the speculators, and in the panic which would result the latter would reap an abundant harvest.

The quarterly cinnamon sales were held at the end of February, and comprised the large total of 4,069 bales. The average supply at the February sales for the past 10 years has been 3,292 bales. About 2,300 bales sold, but the prices realised were from 1*d.* to 4*d.* per lb. less than those of the last sales.

ESSENTIAL OILS.—Bergamot is selling at very low prices, but lemon is dear; its future seems uncertain, but reports from Sicily are unfavourable as to the new crop. An English oil of caraway has been introduced at a low price.

ISINGLASS.—The auctions last month showed some lack of spirit. Brazilian was offered in greatest abundance, and lump made about 2*d.* less than last sales; tongue about the same. East Indian was steady, and tongue Bombay made 2*d.* advance; West Indian about 2*d.* cheaper.

IPECACUANHA is not abundant, and holders are firm for higher prices.

VANILLOES have been sold at from 1*s.* to 4*s.* reduction.

MUSK is selling at easier rates.

OPUM is decidedly dearer in the London market, and considerable transactions have been effected. Even now the London prices are not equal to those paid in Smyrna for corresponding qualities when costs of transit are added. The following may be taken as the latest London prices

usually paid. The first two are the soft shipping kinds
bought for export to South America:—

Malatia	16s. 6d. to 17s.
Tokat	16s.
Salonica	15s. 6d.
Fine Turkey	14s. 6d.
Seconds	12s. to 13s. 6d.

Mr. Barker, writing from Smyrna on February 17, says
the market there has been gradually advancing, owing to
the continuance of very severe weather and the unpre-
cedented dryness of the season, no rain having fallen since
the commencement of the year, and, unless we have copious
rains during the months of March and April, not only
the crops in general, but the crops in general, will be very deficient.
Writing again on February 28 he adds:—The advices from
Cahissar, Sparta, Ushak, and Kutahia, continue unfavour-
able for the poppy plantations, so it would seem that in
these localities they have been much injured by the late
frost; but, in the other opium districts, the ground
covered with snow, and it is hoped that no damage has
been done. Anyhow, until the end of March, it would be
premature to form any opinion as to the probable out-turn
of the growing crop. What is most to be feared is a con-
tinuance of the present dry weather, as the success or
failure of the crop will greatly depend upon the amount of
rain we may have during the next two months.

The arrivals at Smyrna, Constantinople and Salonica to
the end of February amounted in all to 8,920 baskets. Of
these 7,150 had been sold, leaving a stock of 1,770 baskets,
an estimated further supply in the interior of
1,000 baskets. If the latter estimate is correct, the entire
supply of 1881 will not have exceeded 11,500 baskets.
Morphia is 6d. per oz. higher.

SARSAPARILLA.—With a small stock of Jamaica prices
tending upwards.

The sale of a large quantity of Guatemala and Mexican
gum took place this month, and indicated a very strong
demand. There were 4,452 packages put up, most of them
inferior quality, but nearly all was bought, and the good
qualities brought a substantial advance.

GUMS.—Animi and Arabic are quoted lower than last
month, and Assafoetida has a rather downward tendency.
Gamboge, however, has advanced, and Gamboje is again
higher. Myrrh continues to decline, but Sandarac is ad-
vancing.

Shellac has been steady, but of late large quantities have
been sold for arrival, and there may occur an upward move-
ment in this article due to speculation.

OILS.—Olive keeps very quiet with only small sales.
Seed is dull at about 10s. lower than last month. Rape
oil remains as before. Sperm has made a further advance
of 2d. to 73d., and coconut has nearly recovered the fall of
last month.

Petroleum has again disappointed speculators for the rise,
and weakness having become accelerated last week when a
further decline was noticeable almost every day. Sales
for September-December of this year are being made at 6½d.
Turpentine has been steady and strong. Sales for April
are made at 42s., but at 32s. 6d. for September-December.

Messrs. A. M. ZIMMERMANN send us the following notes
respecting certain Continental products:—

Cod-liver Oil.—Some small arrivals of new oil have
usually taken place at rather better prices than we
were met with in the beginning of last season, and to judge
from reports received, holders are becoming very pretentious
because the weather has been unusually unfavourable to
Norwegian fishermen; it is even said, that up to the present
time not a tenth part of last year's quantity of fish has
been landed. We are now getting cod-liver oil of much
improved manufacture. Fresh livers are transferred within
an hour from time of catching to large tanks placed in
ice, thus freezing the stearine out, and giving a non-
rancid cod-liver oil free from any fishy taste; this is in
fact the most efficient way of obtaining the best and most
palatable cod-liver oil.

Liver Oil remains unchanged; the Leghorn samples being
very superior to other Italian oil, prices for this description
of oil promise to be well maintained.

Messina Essences continue slow of sale, with the exception

of essence of bergamotte, which has had more attention
within the last few days. Prices, however, remain un-
changed.

Bromine.—The heavy orders, both for export and home
consumption for bromide of potassium have induced makers
to slightly increase their price, a move which is supported
by continental makers.

Quinine remains in the same state of uncertainty; heavy
stocks of quinine and bark, outside the ordinary trade supply,
continue to endanger any forward purchase, consequently
buyers provide themselves for hand to mouth requirements.
We hesitate to give any decided opinion as to the immediate
future, but venture to say that whatever the ultimate
result may be, there is at present a supply far beyond the
possible extreme demand.

Tannic Acid and all gall preparations continue high in
price, there being great scarcity of China galls.

The following table shows the stocks in the port of
London of the undernamed drugs on February 28 of this
and of the previous four years:—

Statement	1882	1881	1880	1879	1878
Aloes	3,577	3,122	1,777	2,193	2,013
"	2	1	11	11	14
"	25	230	491	183	1,581
Aniseed, Star	510	677	427	546	1,028
Arrowroot	8,979	10,575	9,384	11,566	11,082
"	6,837	9,421	13,558	6,612	5,063
Balsam	7	23	21	44	138
"	835	947	432	566	710
Bark, medicinal	58,835	23,741	16,511	11,664	11,655
"	645	678	484	1,074	983
Borax	503	889	1,067	705	495
Bees' wax	1,171	1,790	2,738	2,477	1,447
"	4	34	6	27	54
Wax, Japan vegetable	4,486	6,527	4,214	5,521	6,532
Camphor	3,612	4,070	3,777	2,226	4,099
Cardamoms	651	408	383	251	473
Cocaine					
Cochineal					
Honduras	283	175	67	75	542
Mexican	566	503	512	320	285
Teneriffe	9,343	6,434	5,674	8,110	8,472
Coculus indicus	660	1,057	1,275	1,635	2,271
Coleombo root	1,473	695	497	676	606
Cream of tartar	83	90	98	81	99
Cubebs	95	93	98	167	185
Dragon's blood	177	170	144	83	123
Galls					
China and Japan	884	1,346	1,459	3,511	1,999
East India					
Turkey & Persian	6,131	1,020	489	828	97
Gum					
Ammoniac	267	340	419	466	526
Animi and copal	6,641	2,508	2,272	4,241	8,728
Arabic, Barbary	2,668	1,339	2,168	1,914	367
Turkey	2,096	1,386	3,589	470	741
East India	2,574	2,109	1,992	1,575	2,843
Assafoetida	472	254	302	261	245
Benjamin	1,845	2,420	2,218	1,238	1,020
Dammer	3,144	3,385	2,140	852	762
Galbanum	24	1	12	19	31
Gamboge	209	199	190	140	128
Guaiacum	50	29	49	29	38
Kino	77	22	38	11	10
Kowrie	672	964	399	835	905
Mastic	115	122	122	163	146
Myrrh, East India	287	164	117	194	276
Olibanum	5,771	4,297	2,767	2,241	4,028
Sandarach	322	165	148	1,189	353
Senegal	1	10	16	22	15
Tragacanth	1,258	1,670	2,319	1,337	982
Indigo					
East India	12,640	10,934	16,472	11,695	12,755
Spanish	4,717	6,274	3,305	4,533	6,164
Ipecacuanha	189	169	141	291	230
Jalap	154	246	309	432	470
Nux vomica	1,033	782	920	4,435	1,210
Oils					
Castor	240	63	95	2	7
"	7,927	8,937	17,913	6,897	2,226
Palm	70	756	395	1,168	401
Cocoanut	11,437	9,686	4,410	3,153	2,547
Olive	1,640	338	1,344	387	852
Aniseed	115	191	186	48	210
Cassia	490	339	316	335	687
Opium	1,695	1,262	1,232	1,050	2,224
Rhubarb	1,056	901	1,209	1,206	865
Sulphate					
Nitrate potass	930	1,969	1,811	2,882	3,543
Nitrate soda	941	2,017	6,099	11,235	10,086
Sarsaparilla	714	522	57	870	1,277
Senna	8,616	1,924	1,476	1,589	3,067
Sn-lake	30,583	29,463	34,883	41,241	40,735
Turmeric	2,306	3,194	3,051	2,028	1,386
Vermilion	29	108	105	49	42



STEAMY WINDOWS.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I read a few evenings ago your article on "steamy windows."

That is a nuisance I have not been troubled with for several years, and yet my shop is generally at a temperature of from 56° to 60°.

My window, like many druggists', is divided into two parts, the lower for showing goods, the upper for carboys, &c.

When I came here 25 years ago, I found the lower part enclosed as is usual, the upper containing two gas-lights open to the shop. Of course, in the winter, the moisture condensed on the top windows, and sometimes found its way in streams to those below.

I have obviated all this by enclosing the upper part containing the gas-lights, and well ventilating at both ends. The window projects a little, and there are side panes of glass 3 inches by 20. I had the top ones knocked out, and a little shutter painted black fitted, which I keep up in the daytime, and take down when the gas is lighted.

The advantages of this arrangement are—

1. My windows never get steamy.

2. Two gas-lights are virtually out of the shop.

3. The window gets very warm, generally in the latter part of a winter's evening 10° above the temperature inside.

4. The window does not want cleaning nearly so often.

Upon the second of these I wish to remark that I believe the health of many chemists suffers, and their lives are shortened, by the unwholesome atmosphere produced by the gas-lights. They are later in their shops than most other tradesmen, and their shops are often small and ill-ventilated.

The plan I have adopted can be carried out in most cases with little expense, and I commend it to all, having found it a great advantage.

Yours respectfully,

A. J. MONK.

Alton, Hants, February 24.

A.B. (Derby).—Your anonymous request for opinions concerning a certain invention offered to chemists cannot be inserted; but if you refer to page 481 of our 1880 volume you will find there the opinion of an eminent pharmacist thereupon.

19/159. J.G.—We are much obliged for all suggestions respecting the Diary. This correspondent thinks it would be more serviceable to druggists generally if we were to reprint in the Diary formulae which have appeared in THE CHEMIST AND DRUGGIST. We have, on one or two occasions, made a general collection of that sort, but we fear to do so year by year would hardly satisfy the majority of subscribers.

52/239. J.H. (Manchester), and 14/243. Dentist (Highbridge).—You have no chance whatever for getting registered as a dentist now without going through the prescribed course of study and passing an examination. The Dentists Act (Clause 7) explicitly limits the right of registration without examination to persons with certain qualifications who should make application before August 1, 1879.

41/241. H.B.—Your case is too personal to publish in full, and, besides, you do not give us the essential particulars. If you could satisfy the High Court of Justice that your opponent is selling to the public a preparation of his own under the pretence that it is yours, the High Court would, no doubt, protect your property. But if we understand your statement correctly it would seem almost doubtful whether he is not the legal proprietor of the preparation, and, indeed, whether he might not obtain an injunction against you for infringing his rights. Do nothing without the advice of a competent solicitor, and unless the property is worth a good deal do not waste your energy in law at all, but devote all you have to the furtherance of your business. You can register a label at Stationers' Hall for a few shillings after first getting a form from there (Stationers' Hall Court, E.C.) for 1d. We do not know that such registration will be of any legal value in respect to an injunction in Chancery. If you registered a label and did not use it, and some one else were to use the same label, and did not register it, we judge that he would have a better chance of getting an injunction against you than you against him.

25/242. C. adds to the *Druggists' Museum* the following orders recently received by him:—"Salholatol," which he took to mean Sp. Ammon. Arom., and "Gum-gline-Acium," for which he dispensed Tinct. Gusiaci Vol.

HOMŒOPATHY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—I am afraid Mr. Foster is like the proverbial Scotchman, who could not perceive a joke unless it was shot from a cannon.

I should not consider it necessary to explain for anyone's edification but Mr. Foster's that the "scribble," of which I am the author, was not intended to be a scientific paper, but simply a humorous skit.

I am well aware that the whole piece was highly exaggerated, but I believe exaggeration is one of the chief features of comic writing.

Mr. Foster seems to think I am entirely ignorant of the principles of homœopathy; it may be that my ideas upon the subject are not quite so clear as his, but if I understand the motto "*Similia similibus curantur*" aright, I think I was not far out in the remarks I made about the plums. If sour plums will produce diarrhoea in a healthy person, why should not they be a remedy for that complaint?

Of course my "Essence of Grief" was a great stretch of imagination. I did not think for a moment that any homœopath would regard it in any other light than you did, sir, when you said "it was comic—no more."

I am, yours truly,

T. F. T.

67/238. *Squills* (Glasgow).—For information respecting all the pharmaceutical examinations obtain the Calendar from the Secretary of the Pharmaceutical Society, 17 Bloomsbury Square, London. It will be sent to you, post free, for 1s. 1d.**Dogs:** how to give them medicine, &c.—The pill is the best form of medicine for dogs. Powders should be made into pills with butter. Put the pill forcibly well back in the mouth, hold the latter tightly closed with the muzzle pointing upward, then tap the dog sharply under the chin towards the throat; this will make him gulp, when the pill must be swallowed.**A Dog Poisoned with Strychnine** should be treated with chloroform until the spasmodic attacks and difficulty of breathing are relieved. Draw an old woollen stocking over his head and drop chloroform near the nostrils. The dog will endeavour to hold its breath to avoid the fumes of the chloroform, but must inhale some of it sooner or later. It would be worth while to try a plan suggested by some recent discoveries of a French physiologist. He found that when chloroform was dropped on the skin of guinea-pigs enough was absorbed to cause anaesthesia. If we had occasion to chloroform a dog we should cut off the hair from a place near the heart and lungs, drop a little chloroform on, and cover with a wineglass. We expect a dog would not resist this mode of administration so persistently as it objects to inhalation.

THE UNDIGESTED GREGORY.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In a paper on the vexed question of "Pulv. Rhel. Co.," read in Edinburgh by Mr. C. A. Macpherson, he says:—"Serious as all the other instances may have been, they have, nevertheless, been quite thrown into the shade by that mentioned in the latest contribution on the subject; but as the statements regarding this are so extraordinary, and apparently beyond the range of probability, it would perhaps be charitable to look upon it as a joke."

I am quite prepared to admit that my statement was extraordinary, but I had, and still have, every reason to believe it is quite correct. My informant is a very intelligent and observant man, and he still maintains what he told me at the time the incident happened.

He says the medicine never acted, and at times he had slight sickness, and it was during one of these sick turns that he vomited, and on examination of the vomit he found the Gregory floating quite dry.

Perhaps some member of the medical profession will be able to account for the unmixibility of Gregory in the stomach of a postman.

A. FRASER.

Forres, March 8, 1892.

34/239. W. E. E.—**Inexhaustible Smelling Salts.**—We know of no better method than that recommended many years ago by Mr. Allichin. His plan depends upon the conversion of the ordinary sesquicarbonate into the neutral carbonate of ammonia previous to filling into bottles. This is accomplished as follows:—Forty avoirdupois oz. of the sesquicarbonate are taken and broken into small pieces, and put into an air-tight jar, and 20 fl. oz. of strong solution of ammonia, sp. gr. 880, perfumed (Godfrey's essence), poured over it. The jar is then carefully closed, and is only to be opened once or twice during the first week to be stirred with a spatula. In two or three weeks it will have set, and will then be ready for use.

DISPENSING QUERIES.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Can you or any of your readers supply the formula for nitroglycerine dilute, 1 per cent. strength; also the method of preparation, if special precaution is necessary? It is being used extensively in Edinburgh at present for chest affections, &c., in doses of 1 minim to 3 minims.

Will some "light" in the trade say what is intended in the first of the following prescriptions, and how they dispense them to make beautiful clear mixtures as the doctor insists upon, and still supply in their integrity?

No. 1.

Potass. iodidi	3iss.
Quin. et ammon. cit. .. .	3j.
Syrup aurantii	3j.
Aquæ ad.	℥viij.

3ss. ter in die ex. aqua.

No. 2.

Potass. iodid.	5iis.
Quin. et ferri cit.	3j.
Decoct. cinch. flav.	3viij.

tablespoonful in water three times a day before meals.

Yours respectfully,

SCOTIA.

March 2.

We are sorry to give "Scotia" the chance of blowing either himself or other person up, and would therefore advise him to be content with 1 per cent. solution to be obtained from most of the wholesale houses. I give him, however, a process taken from Watts' "Dictionary of Chemistry."

200 grammes syrupy glycerine, sp. gr. 1.262, are gradually added to 2 c.c. of nitric acid, of sp. gr. 1.52, immersed in a freezing mixture, the acid being continually stirred, the temperature allowed to fall to -16°C . Before each fresh addition, and never to rise above 0° . A homogeneous mixture having been thus obtained, 200 c.c. of strong sulphuric acid are gradually added, the mixture being still kept below 0° . The oily nitroglycerine (200 grammes), which then floats on the surface, is separated by a funnel from the acid liquid, and dissolved in the smallest possible quantity of ether; the solution is repeatedly shaken with water, till the ether no longer reddens litmus; the ether evaporated, and the remaining nitroglycerine heated over the water-bath, until its weight remains constant. On page 173 of our volume for 1880 we give an improved process which obtained a prize of 2,500*fr.* offered by the French Academy of Sciences. Glycerine is converted into sulphoglyceric acid, and is then added to a cooled mixture of equal parts of nitric and sulphuric acid. The nitroglycerine forms gradually during about 20 hours, and can be easily washed. 1 part of this 99 of alcohol, or almond oil, would give "Scotia" 1 preparation required.

The writer of prescription No. 1 should be communicated with to ascertain what is meant by *quin.* et *ammon. cit.* We know of no such preparation, and therefore it is useless to speculate as to the mode in which it could be dispersed.

Prescription No. 2 is an interesting one, from the fact that, if it is made with the ordinary commercial concentrated decoction or infusion of Quinine (1 to 7), the probability is that the mixture will be sent out perfectly and permanently bright, having a slight opalescent appearance by reflected light, but clear and elegant by transmitted light. If the mixture, however, is made up with freshly-prepared decoction or infusion (as it could be), immediately on the addition of the citrate of iron and quinine a copious grey-white precipitate will form, changing to blue-black, making the mixture altogether unsightly. This precipitate is principally tannate of quinine and iron, and its absence from the mixture made with the concentrated decoction depends probably upon these two things, viz.: (1) absence of tannates, owing to their being thrown out in process of condensation; or (2), a chemical change in the tannates, owing to exposure, whereby they are rendered insoluble and are thrown down.

COMMERCIAL CHINOLINE.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—In connection with a description of an impure sample of commercial chinoline Mr. Charles Ekin (see *Pharmaceutical Journal*, February 11, 1882) makes remarks which, from their occurrence in a well-known weekly periodical, are liable to discredit the good reputation which chemical products of German manufacture justly deserve. Evidently, also, he is not thoroughly conversant with the literature of chinoline, which has, certainly, during the past few years, become very voluminous. Under these circumstances we should be unfair to ourselves to let his "Note" pass without reply.

Respecting the statement that one sample of commercial chinoline contained both aniline and nitrobenzol, we can only say that their presence is at surprising when we remember, first, that the chinoline of Skraup and Briggs is made from those substances, and, secondly, that the complete separation of all unaltered traces of them from the first produced chinoline is not yet possible, though that result will no doubt ensue should any demand for the free chinoline arise. This is a matter of small moment, however, inasmuch as not free chinoline, but the salts of chinoline, and chiefly the tartrate, are used in medicine, and these are obtained by manufacturers unmixed with aniline and nitrobenzol.

Another question raised is whether or not the chinoline from cinchonine and the synthetically-formed chinoline from coal tar are identical. This, so, as regards the use of chinoline in medicine, would seem to be a matter of little moment; for Donath, to whom principally we owe our knowledge of the physiological action of chinoline salts, states that he experimented with chinoline of varied origin with like results. But the scientific interest attached to the question induces us readily to say the following few words on the subject:—

Since Greville Williams wrote on chinoline, and, before him, Gerhardt, Berthelm, Hoffmann, and others, our knowledge of this base has been greatly extended. The most celebrated names in chemistry are connected with its study. But while we may leave the actual proof of the identity of the chinolines to Baeyer, E. Fischer, A. W. Hoffmann, Van Dorp, Königs,

Skraup, Donath, and others, we may safely assert that the labours of such chemists indicate that the identity of the chinolines with each other is in the highest degree probable, the more so as our theoretical knowledge of this body does not let us suspect the existence of a second isomeric chinoline. The conformity of the sulpho-acids and of the oxidised products of the cinchonine-chinoline with those of the chinoline from coal-tar has been established by Königs, Fischer, and Bedall.

Besides all this, the cinchonine product to which Mr. Ekin gives the unqualified term chinoline, and uses as a standard of comparison for other chinoline, as though it were a pure simple body, is not a pure simple body, but is associated with lepidine and its homologues.

These points are undergoing scientific investigation. Outside of them is the circumstance that Mr. Ekin, after examining a sample of impure chinoline supplied to him by a pharmacist at the West-end of London, condemns without reservation "the German chinoline." This, manifestly, is unfair to the now well-known and celebrated German manufacturers and their factory managers.

CHEMISCHE FABRIK AUF ACTIEN,

Berlin, March 6.

formals E. S. HERING.

THE LONDON FEVER HOSPITAL, LIVERPOOL ROAD, N.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—At the annual meeting of the governors of this hospital it was decided, with great regret, that two wards must now be closed, owing to the want of funds.

This is the only hospital in London devoted to the reception of persons suffering from infectious fevers, who are not paupers. It is very largely used by employes in shops, domestic servants, and schools; but there are also private rooms for persons of a superior class.

Last year the hospital took in more than 1,000 cases of fever, and at present has over 100 patients in its wards. Each patient stays on an average 42 days in hospital, and costs over 8*l.* (if his proportion of administrative expenses be included).

The expenses of a fever hospital are necessarily very heavy. In one ward, and at the same time, last year, there were four nurses down with fever, caught in the performance of their duties.

The hospital has no endowment, and last year it exceeded its income by 4,000*l.* Its available capital is now reduced to less than 5,000*l.* If it does not receive largely-increased support, it must be closed next year. Its good work in arresting the spread of infectious fevers will then be brought to an untimely end, and serious embarrassment and danger will be caused to the public who rely upon it.

During the past three years the hospital has received more than 600 domestic servants, who have been removed to it from their masters' houses; yet only eleven of the masters have subscribed or given donations sufficient to cover the expenses of the patients sent in.

Subscriptions are earnestly sought to enable the hospital to carry on its good work, and will be thankfully received by the bankers, Messrs. Dimsdale & Co., 50 Cornhill, E.C., or by the secretary, at the hospital.

I am, sir, your obedient and humble servant,

DEVON, President.

Liverpool Road, Islington, N., March 10.

THE "GRAPH" PATENT—CAUTION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—It may interest your readers to know that the copying process for taking duplicates of writings, drawings, &c., with aniline ink, by means of a compound of gelatine, glycerine, and water, popularly known by the name of "Graph," with a prefix according to the fancy of the maker, is protected by patent granted to John Guy Wilson, November 13, 1875; and anyone making or selling this or similar composition is liable to prosecution for infringement of patentee's rights.

In common, I doubt not, with many of my brother pharmacists being misled by statements that appeared from time to time in our trade journals that the composition was too simple to be patented, and having made it for my own use, at the request of a friend I made it and sold it on a very limited scale to two or three customers. The Hektograph Company having bought the patent is now prosecuting all and sundry in ringers. Having had to pay a heavy penalty myself, I would caution anyone who has manufactured or sold the "Graph," unless protected by the patent, to discontinue making or selling it.

March 9.

E. COATES.

23,240. *Inquirer.*—**Depilatories.**—Professor Redwood recommends a strong solution of sulphide of barium made into a paste with powdered starch, and applied immediately, as "the best and safest depilatory." Generally depilatories contain quicklime and orpiment (sulphide of arsenic), and, of course, are dangerous. They should not be applied if the skin is at all abraded, and in any case should only be used with extreme caution. An ordinary form is—orpiment, 1 part; quicklime, 9 parts. When ready to be applied, mix into a paste with soap lees and starch, or with equal parts of soft soap. For the other formula you require see *The Chemists and Druggists' Diary*, 1881.

MEETING COMPETITION.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—“We hear that the Lewis firm, which has made such havoc with the patent medicine and druggists' sundries trade in Liverpool and Manchester, are about to open an establishment in Birmingham.”—Extract from THE CHEMIST AND DRUGGIST of February.

To defend themselves against the unfair competition of tailors, grocers, tea dealers, &c., I would strenuously advise the chemists of Birmingham to at once cut down the prices of patent medicines and proprietary articles, and I will give you my reasons for so advising them.

From observation in my own locality (Manchester), and seeing that many chemists are now beginning to sell at reduced prices, I believe the bulk of them regret they did not grapple with the difficulty at the first onset, for they seem to think it now almost too late. If it is so here it may not be in other places, and that is one reason why I would advise all chemists to take the initiative, for although the cutting of patents, &c., may be confined at present to most of the larger towns it is sure to spread to the others and to the smaller ones, and what I suggest is simply a matter of self-defence.

Whatever the gross turnover in one of these large cutting-places might amount to at the end of their first year, with the aid of patents, I am certain that without this tremendous lever it would not amount to one-third. There is such a palpable difference in price between us and them for the identical article. Why, then, play so much into their hands? It is just what they like best. Why not cut the ground from under their feet instead of assisting to build up their trade! Our opponents, I say, use these patents and proprietary articles as a lever, and you must allow it is a very powerful one. It is their advertisement. People see 13½d. marked on a box of pills, yet get the same for 10d. or 10½d., and naturally enough say “that is a cheap shop”; and, having swallowed the bait, are taken in with the idea of every other article being sold at the same ratio. Do chemists ever consider that they will be considered correspondingly dear, and that their customers begin to look suspiciously at the price of everything they require from the chemist? I have found it so, and it actually grows worse, because, thanks to our way of doing business, we send so many customers to the cutting shop that the proprietors can afford to go cash in hand to the makers, get the full (wholesale) discount, and thus sell at the (to us) cost price, and yet make 10 per cent. profit.

In almost every large centre of population we have this question presented to us, and it has been met in various ways. One man tries to show his customers that these cutting people simply make a bait of marked articles, to sell other things at a greater profit, and another tries to insinuate that customers do not get the genuine article, or get some old stock; but I think in most cases we have allowed things to take their usual course.

But does all this fencing meet the case? I think not, and more than that I think if chemists would only look at the question from any other standpoint than their own (an interested one) they would come to the same conclusion. Would they continue to give 7s. 6d. for a bottle of Hennessy's or Martell's three star brandy to one person when another offers it for 5s. 6d.? I say certainly they would not. I quote this because it is a standard article in the spirit trade, just as Cockle's or Holloway's is in ours.

It is most absurd to hold out for a full price when the article can be had from so many sources, and at so much less. Some chemists say they would rather sell half-a-dozen at 13½d. than 2 dozen at 10½d.; but is this wise? In the first instance you drive away the customer, and he falls into the habit of calling elsewhere, and thus you have no chance of making anything out of him; but if you keep him by meeting these competitors you only make a small profit on the patent it is true (if you cannot avoid selling it), but on the other hand, you can easily and conscientiously show your customers that a patent cannot cure all complaints (as generally promised), and out of the two dozen customers surely you can in half-a-dozen cases sell something more suitable and profitable, besides the likelihood of their seeing in your shop something else they require. You have thus twenty-four chances of selling additional articles and substituting, as against six, in addition to doing a little towards diverting the patent to the family trade.

I am not arguing the question for the value of the patents alone, but for its influence on the other branches of the business, and I earnestly press upon my fellow-chemists the necessity of not only pondering over but also of acting vigorously in this matter.

There is just another point. We are often asked our opinion of, or do we know anything about, such a medicine. Now I should like to press upon chemists, more particularly in country and remote districts, the advisability of setting their faces as much as possible against recommending under any circumstance a patent—in fact, discourage the sale as much as possible in a quiet way without seeming to be dealt against it.

There ought not to be any difficulty in supplying any of the numerous wants, brought out of the way, of our customers, both to our own and their advantage, without selling patents (unless unavoidable) seeing the valuable formulae and hints given from time to time in THE CHEMIST AND DRUGGIST.

MONRO.

24/167. *Jumbo*.—We have not met with the formula for Widow Welch's Pills. Perhaps some correspondent can indicate it. We are obliged for your other remarks, but do not care to criticise our contemporaries, except when the interests of the trade seem to demand some comment.

TO THE EDITOR OF "THE CHEMIST AND DRUGGIST."

SIR,—Can you tell me if there is such a preparation as gazeline oil? I had the following recipe brought me:—

Linseed oil	83
Gazeline oil	63
Spirits of wine	45
Isinglass	45
Common vinegar	83

Mixed cold.

I was advised by a friend to use paraffin, but my customer said what she had before smelted of nothing stronger than linseed oil. I then left the isinglass two days in the vinegar, and afterwards mixed in the s.v. and linseed oil, leaving out the gazeline oil, but the result is not satisfactory, as it seems as if the isinglass was not properly dissolved.

QUERO.

Gasolene, which we suppose is meant, is one of the earliest of the products of petroleum distillation. A. H. Allen gives its density as '650 to '665; ordinary benzene is '725 to '737.

E. R. W. (*Dartlish*).—**Dental Education.**—By the Dentists' Act all dentists must now be registered. Candidates for registration must be Licentiates in Dentistry. To become a licentiate the candidate must be 21 years of age, and must pass certain examinations. Details of the necessary hospital study and examination are given on page 416 of our last September issue. The requirements of the licensing bodies vary. The Royal College of Surgeons requires that the student shall have spent four years in acquiring professional knowledge, of which three must have been devoted to mechanical dentistry under a competent practitioner. This is equivalent to three years' apprenticeship, and one year's hospital practice. The fee for the diploma is 10*l.* 10*s.*; for registration, 5*l.*; hospital fees, 2*l.* to 30 guineas.

W. Miller.—**Spectroscopes.**—J. Dronning, 63 Strand, London, W.C., makes spectroscopes at prices from 2*s.* upwards. His illustrated catalogue of spectroscopes costs 6*d.*

29/243. J. E. E.—We should say that your preparation would certainly need to be stamped by which ever title you described it. You can hardly describe it without recommending it for a disease, and if you do so it is liable. It is also liable if in any way you claim a proprietary right in it.

10/242. *Obo*.—Why not refer to the advertisements in the Diary? You would get the information you want therefrom.

32/243. *Subscriber*.—Read a 1*s.* book on the eyes in Ward & Lock's Long Life Series. You might also get Brudenell Carter's "Eyesight, Good and Bad." But you must pick up the art of suiting your customers by your own intelligence. At least, we do not know where to advise you to seek for information.

7/240. *Alpha*.—The following is a formula which yields a preparation very similar to most of the popular hair restorers:—

Acetate of lead	45 grains
Precipitated sulphur	60 grains
Glycerine	½ fl. oz.
Rose water	1 fl. oz.
Distilled water	10 fl. oz.

THE ACCEPTANCE OF A CHEQUE FOR A LESS SUM MAY BE A COMPLETE SATISFACTION OF A DEBT.—An interesting point came up recently for decision in the Southwark County Court, viz., whether if a cheque for a smaller sum is given and expressly received in satisfaction of a debt, the creditor can sue for the balance. In the case under notice a creditor for 125*l.* 7*s.* 9*d.* agreed to accept his debtor's cheque for 100*l.* as full satisfaction of the debt, and gave him a receipt, which was as follows:—"Received the sum of 100*l.* by cheque, which is to be a settlement of account of 125*l.* 7*s.* 9*d.* on said cheque being honoured." The cheque was duly honoured, but a year afterwards the creditor sued for the balance of 25*l.* 7*s.* 9*d.* Now, the rule of the law is well settled (although it is a very anomalous one) that the receipt of a smaller sum is not a satisfaction of an entire debt unless there is a release by deed, or there is some consideration for relinquishing the balance. But if a bill of exchange or promissory note for a smaller amount is accepted by a creditor, it operates as a satisfaction of the entire debt. The Court held, although with some hesitation, that the acceptance of a cheque had the same effect, and therefore decided against the claim of the plaintiff.—*Capital and Labour*.

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Digestion
Nervous Complaints
Neuralgia
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Asthma
Writers' Cramp
Loss of Voice

Asthma
Bronchitis
Paralysis
Epilepsy
Rheumatism
Gout
Constipation

Local Debility
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Physical Weakness
Functional Disorders
&c., &c.

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Even a Five Shilling Band of the minimum electric power evinces its genuineness by deflecting a telegraphic needle at many miles' distance, whilst those of superior price and power produce all the physical, chemical, and physiological phenomena possessing the famous curative powers of the voltaic battery, enhanced by their great portability.

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TO CHEMISTS AND DRUGGISTS.

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	Æsculap.	Friedrichshall.	Hunyadi Janos.
Sulphate Magnesium	1750·3	641·38	1563·50
„ Sodium	1340·7	715·35	1579·57
Ammonia (free)	0·3	.....	trace
Sulphate Potassium	3·5	25·18	7·16
„ Calcium	185·6	171·30	.....
Chloride of Sodium	301·3	997·22	105·31
Bicarbonate „	140·3	.....	51·52
Carbonate Calcium	1·9	} 21·02	60·51
„ Magnesium	12·0		
„ Iron	3·5		
Alumina	5·6	}	0·29
Nitrates (minute trace) .....	.....	
Silica	1·6		
Bromide Magnesium	4·40	0·80
Chloride „	2·75
Carbonate Strontium	501·14
	2·0
Total	3746·6	3079·74	3370·66

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Herr JOHANN MOLNAR, Government Analyst of the Hungarian Kingdom, in a Report to the Academy of Science, states that:—"ÆSCULAP is among the strongest of the Aperient Waters of Buda, and in consequence of its purity and clearness will be employed for medicinal purposes with satisfaction."

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Dr. PROSSER JAMES, Lecturer on Materia Medica and Therapeutics at the London Hospital, and Physician to the Hospital for Diseases of the Throat and Chest, says, in his report on the Therapeutics of Mineral Waters:—"The Æsculap spring may claim to be the chief of the Open group, for, with only five grains less of purgatives than the highest, it is three times as rich in antacids. It contains three times as much chloride of sodium as the other Hungarian waters named."

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JULY 2ND, 1881.)

Exhibited at the British Medical Association, 1881.

THE EAR PROTECTOR is a simple elastic cushion admirably adapted to prevent the injurious effects of COLD, SUDDEN SHOCK, or NOISE. It can be instantly adjusted in the orifice of the external ear; and it is made in several sizes to suit the varying capacity of the Auditory Canal.

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THE EAR PROTECTOR is a complete substitute for the unsightly and inconvenient plug of cotton wool; and it can be safely used by ALL persons labouring under AURAL WEAKNESS, and by all susceptible to PAIN and COLD in the EAR.

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From Surgeon-General J. MOUAT, V.C., C.B., M.D., &c., London.
 Dr. Ward Cousins has sent me a simple and ingenious Ear Protector to protect the ear from cold, shock and noise, in the form of a very small vulcanite plug, resembling the top portion of the finger of an inverted glove, which, when introduced into the ear, effectually prevents the entrance of air, or water, and deadens noise. I consider this invention admirably adapted for the purposes for which it is intended."

Deputy-Surgeon-General HENRY F. WILLIAMS, M.D., &c., Southsea.
 I have examined your Ear Protector, and am of opinion that as soon as it is adopted generally by those exposed to sudden and loud explosions, all as confused noises from engines and machinery, much benefit as comfort will be experienced."

Deputy-Surgeon-General HENRY F. WILLIAMS, M.D., &c., Southsea.
 The ease with which the ear tolerates its presence, non-unsightliness, in comparison with cotton wool, its portability, and trifling cost recommends it."

B. SCHWARZBACH, M.D., Professor of Auræ and Ophthalmic Surgery at the University of Königsberg.

Many thanks for sending me some of your Ear Protectors. I have tried on some of my patients and consider your invention a capital idea. It not only subdues the sound by one half, but it also gives to the external ear an equal and pleasant degree of warmth, which is essential in removing the tenacious middle-ear catarrh. I am using one myself when going swimming."

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From Surgeon-General J. A. WOOLFVRYES, C.B., M.D., &c.
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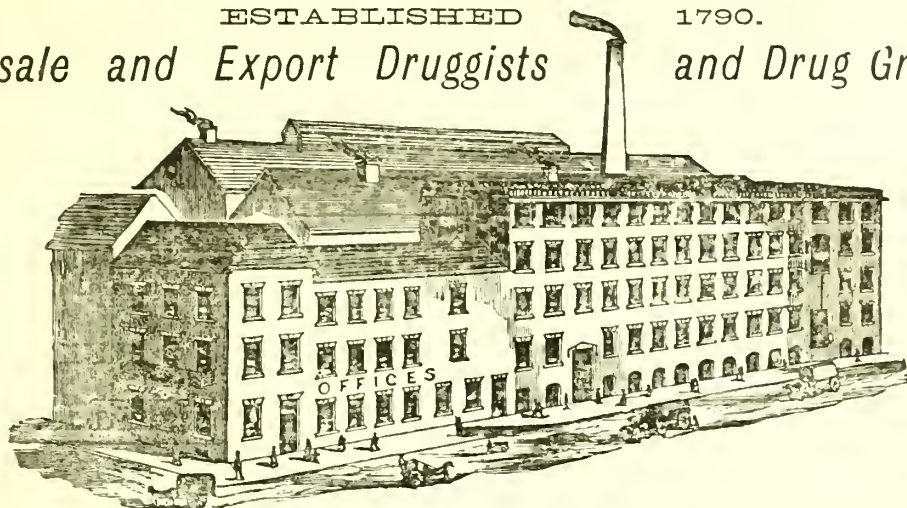
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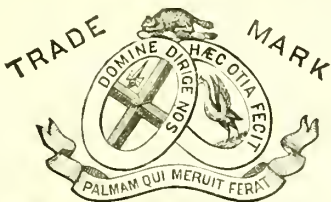
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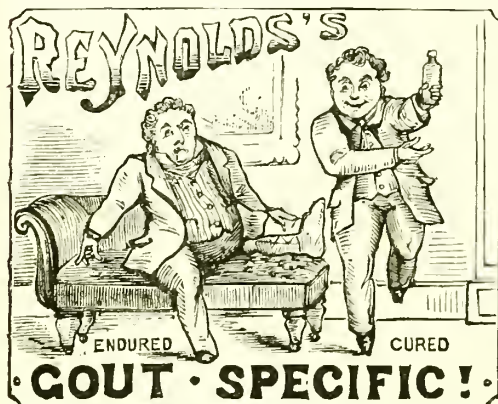
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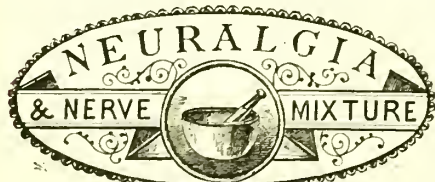
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THE ORIGINAL AND ONLY GENUINE.

IMPORTANT CAUTIONS

From Lord Chancellor SELBORNE, Vice-Chancellor Sir W. PAGE WOOD,
and the LORDS JUSTICES OF APPEAL.

VICE-CHANCELLOR SIR W. PAGE WOOD, by whom the suit in Chancery was first heard, stated in his judgment that Dr. J. Collis Browne was undoubtedly the Inventor of Chlorodyne, that the whole story of the Defendant Freeman was as deliberately untrue as the falsehood he had deposed to with reference to the use of his Chlorodyne in the Hospital.
The VICE-CHANCELLOR also stated, 'that Chlorodyne was a fanciful name, and had application been made sooner, the Court would have given Dr. Browne protection.'
LORD CHANCELLOR SELBORNE coincided with the judgment of the Vice-Chancellor upon this point, and stated 'that had application been made at a proper time and place, the Court would have found means to restrain the Defendant from misrepresenting the decision of the Vice-Chancellor.'
LORD JUSTICE JAMES, on appeal, stated in his judgment, 'that the Defendant Freeman had made a deliberate misrepresentation of the decision of Vice-Chancellor Wood.'

It was proved in Court, on affidavit by Mrs. Forbes, of Paris, that the testimonial published in the *Times*, November 14th 1875, speaking of the great efficacy of Chlorodyne in Cholera, referred to Dr. J. Collis Browne's Chlorodyne, and that she never used any other, that she had written to the Defendant Freeman to that effect; notwithstanding which notice the Defendant publishes the said testimonial as referring to his medicine.

The Editor of the *Medical Times*, in his report on Chlorodyne, January 13th, 1866, gives information that the Chlorodyne referred to was the medicine introduced by a retired Army Medical Officer, which was Dr. J. Collis Browne; still this is published by the Defendant as testimony to his medicine.

Numerous affidavits from eminent Physicians and others were produced in Court, stating that Dr. J. Collis Browne was the Inventor of Chlorodyne, and that when prescribing they mean no other.

The Defendant himself publishes that his compound is in effect and composition quite different to any other preparation therewith he assumes the name, testimonials, &c., of Chlorodyne.

Technicalities in law prevent that protection which the public should justly have against such a course of conduct. It is now incumbent on all who purchase Chlorodyne to see that the name, 'Dr. J. Collis Browne's Chlorodyne,' is engraved on the Government Stamp, as it is not sold otherwise. All other compounds under the name of Chlorodyne are spurious. All attempts at analysis have failed; hence the statement that the constituents of Chlorodyne are known is a misrepresentation.

From SYMES & Co., Pharmaceutical Chemists, Medical Hall, Simla,
January 5, 1880.

To J. T. DAVENPORT, Esq., 33 Great Russell Street, Bloomsbury, London.

DEAR SIR,—Have the goodness to furnish us with your best quotations for Dr. J. Collis Browne's Chlorodyne, as, being large buyers, we would much prefer doing business with you direct than through the wholesale houses. We embrace this opportunity of congratulating you upon the wide-spread reputation this justly-esteemed medicine has earned for itself, not only in Hindostan, but all over the East. As a remedy of general utility, we much question whether a better is imported into the country, and we shall be glad to hear of its finding a place in every Anglo-Indian home. The other brands, we are happy to say, are now relegated to the native bazaars, and, judging from their sale, we fancy their sojourn there will be but evanescent. We could multiply instances *ad infinitum* of the extraordinary efficacy of Dr. Collis Browne's Chlorodyne in Diarrhoea and Dysentery, Spasms, Cramps, Neuralgia, the Vomiting of Pregnancy, and as a general sedative, that have occurred under our personal observation during many years. In Choleraic Diarrhoea, and even in the more terrible forms of Cholera itself, we have witnessed its surprisingly controlling power. We have never used any other form of this medicine than Collis Browne's, from a firm conviction that it is decidedly the best, and also from a sense of duty we owe to the profession and the public, as we are of opinion that the substitution of any other than Collis Browne's is a deliberate breach of faith on the part of the chemist to prescriber and patient alike.

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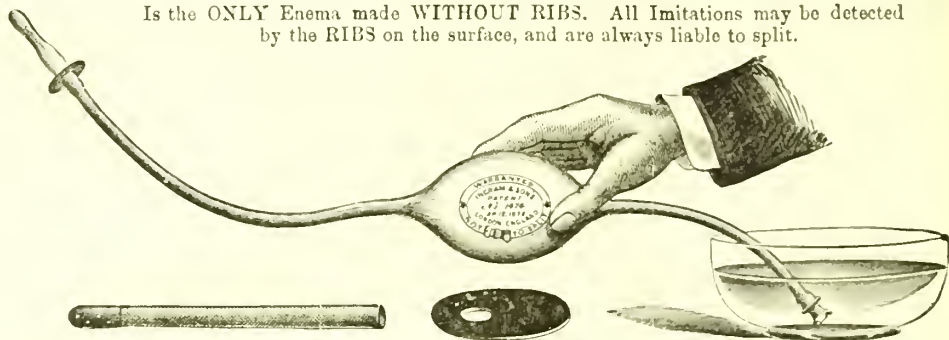
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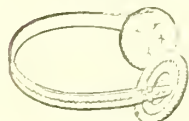


FIG. 1. Patent Single.



FIG. 2. Patent Double.

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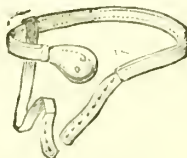


FIG. 3. Common Single.

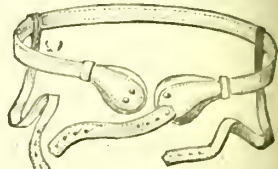


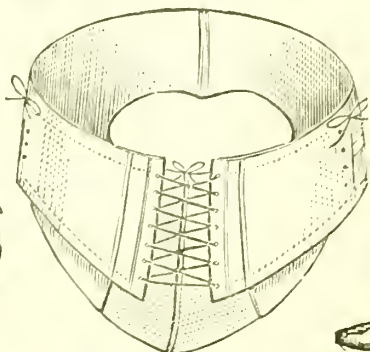
FIG. 4. Common Double.

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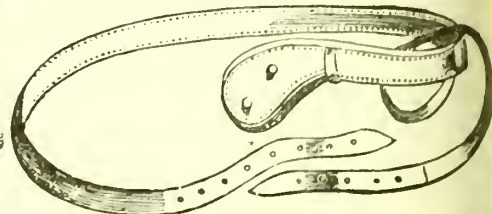
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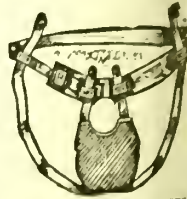


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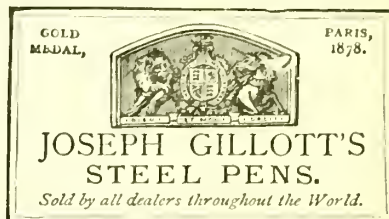
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The Celebrated CURE FOR Scrofula, Scurvy, Blood and Skin Diseases, and Sores of all kinds.

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CAUTION.—Mr. CLARKE will take immediate proceedings against all persons pirating his Trade Mark, "Blood Mixture," Labels, Wrappers, &c., Advertisements, or in any way infringing his rights.

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The Original Preparation, as approved by the Medical Profession on account of its known composition and uniform strength.

Retail at 13½d., 2s. 9d., and 4s. 6d. Dispensing, 4 ozs., 4s. 6d., and 10 ozs. 11s. stamped.

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As originally introduced by A. P. Towle, and free from stamp duty for dispensing.

4 ozs., 4s.; ½ lb., 5s. 6d.; 1 lb., 10s.

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SANCTIONED BY HER MAJESTY'S GOVERNMENT.

Protected under the Trade
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HEALTH, STRENGTH, AND ENERGY.

DR. LALOR'S
PHOSPHODYNEDiscovered and so named A.D. 1862,
by R. D. LALOR, M.D.To Residents in India, China, and the Colonies, it will
prove invaluable as a Reliable Liver Tonic and a Vitalising
Restorative.

DR. LALOR'S PHOSPHODYNE

Is a Pure Solution of Phosphorus, pleasant in flavour and appearance, being a perfectly Bright Liquor, combined with Vegetable Alkaloids, possessing marvellous Curative Properties, the Wonder of Modern Chemistry, free from all Dangerously Active Drugs; innocent in its action, and pronounced by the Highest Medical Authority to be unequalled for its power in replenishing and elaborating the Vitality of the Body; by its supplying all the essential constituents of the Blood, Brain, and Nerve Substance; and for developing all the Powers and Functions of the System to the highest degree, thereby checking all Wasting of the Vital Fluid, and the more Exhausting Wear and Tear of Life resulting from Over-taxed Energies of Body or Mind, maintaining that Buoyant Energy of the Brain, Nervous and Muscular Systems, which renders the Mind Cheerful, Happy, Brilliant, and Energetic.

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Surpasses all the known therapeutic agents of the present age, for the Speedy and Permanent Cure of all Derangements of the Nervous and Blood Systems.

Nervous Prostrations, General Debility, Mental and Physical Depression, Incapacity for Study or Business, Noises in the Head and Ears, Loss of Energy and Appetite, Nervous Debility in all its Stages, Softening of the Brain, Paralysis, Pains in the Back, Affections of the Kidneys, Urinary Deposits, &c., Asthma, Scrofula, and Skin Diseases, Wasting or Withering of the Muscles, Impure and Impoverished Blood, Premature Decline, and all morbid conditions of the system dependent upon the deficiency of the Vital Forces arising from whatever cause.

DR. LALOR'S PHOSPHODYNE is sold in Bottles at 4s. 6d. and 11s., by all Export, Wholesale, and Retail Medicine Vendors throughout the World.

IMPORTANT NOTICE.—NONE IS GENUINE UNLESS the name Dr. Lalor's Phosphodyne, London, England, is blown in the Glass of each Bottle, and every Bottle bears the British Government Stamp, with the words DR. LALOR'S PHOSPHODYNE, London, England, engraved thereon by Order of Her Majesty's Honourable Commissioners, IF NOT IT IS A FORGERY, AND YOU HAVE BEEN IMPOSED ON BY A WORTHLESS IMITATION.

The Phosphoric Treatment of Disease, with Cures, post free from

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N.B.—DR. LALOR'S PHOSPHODYNE will keep in any climate, and is, therefore, specially adapted for SHIPPING.

STEDMAN'S
TEETHING POWDERS1 1/2 and 2/9
per Packet.1 1/2 and 2/9
per Packet.

The CHEMIST & DRUGGIST, in an article on
"CHEMISTS AND LAW,"

in issue February 15, 1882, p. 79, referring to the magisterial decision that Hunter's Solution of Chloral must be labelled poison by the vendor, says:

"There are numbers of patent medicines supposed to contain a scheduled poison. Are chemists to label them 'poison' on the mere guess? Whether the police intend to take further steps we do not know, but it must be understood that anybody may prosecute under the 17th section of the Pharmacy Act, and the seller of a poisonous patent medicine, not the maker, will have to pay the penalty if anybody should choose to make a crusade, and if the presence of the poison should be proved."

In order to demonstrate the absence of any narcotic from his Powders, the proprietor has had them analysed by Dr. HASSALL, who certifies as below:—

STEDMAN'S TEETHING POWDERS.

THE ANALYTICAL INSTITUTION.

54 HOLBORN VIADUCT, E.C.
LONDON, 29th Nov., 1877.

REPORT ON THE TEETHING POWDER PREPARED BY
MR. JAS. STEDMAN, HOXTON.

I hereby certify that I have purchased a sample of STEDMAN'S Teething Powder, and have, at the request of the Proprietor, subjected it to Analysis for Morphia or Opium in any form.

I am enabled to state that I found the sample in question to be absolutely free from Morphia, or any other Alkaloid or constituent of Opium.

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Thus Vendors need not be under any apprehension of interference either by Police or Coroner, as the FREEDOM FROM NARCOTIC removes Stedman's Teething Powders from the "Scheduled Poisons" List, and prevents the possibility of inquests on account of the administration of these Powders.

Price 78/- per gross net.

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The Proprietor knew from experience that success was certain, but the human breast is so imbued with prejudice, that it forms one of the strongest barriers to break down and the greatest enemy to overcome before any headway can be made towards the mansion of success. Truth has often proved itself to be "stranger than fiction," and it is a fact as solid as truth that

BEECHAM'S PILLS

have now become one of the leading Patent Medicines of the present day. From north to south, and from east to west, they are to be found in the homes of the rich and the poor. All classes of society use them, and they are by thousands declared to be

WORTH A GUINEA A BOX.

For a Weak Stomach, Impaired Digestion, and all Disorders of the Liver, they act like "MAGIC," and a few doses will be found to work wonders on the most important organs in the human machine. They strengthen the whole muscular system, restore the long-lost complexion, bring back the keen edge of appetite, and arouse into action, with the ROSE-BUD of health, the whole physical energy of the human frame. These are "FACTS" admitted by thousands, embracing all classes of Society, and one of the best guarantees to the Nervous and Debilitated is, BEECHAM'S PILLS have the LARGEST SALE of any Patent Medicine in England.

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All Patent Medicine Dealers abroad will find BEECHAM'S PILLS one of the most profitable and one of the best selling articles in the Market. The demand for them is regular, and all Foreign Houses who are desirous of getting a First-class Patent Medicine are respectfully requested to get BEECHAM'S PILLS from the leading Wholesale Houses in England (as no business will be done with any Foreign House by the Proprietor direct).

CAUTION.—The Public are requested to notice that the words "BEECHAM'S PILLS, ST. HELENS," are on the Government Stamp affixed to each Box of the Pills; if not on, they are a Forgery.

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[ESTABLISHED
OVER 40 YEARS.]

COMPOUND CASTOR OIL PILLS.

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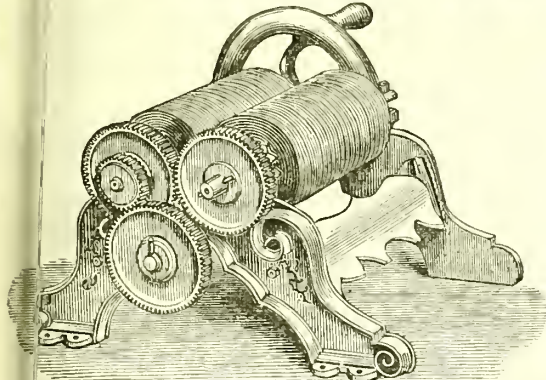
The Proprietor of these old-established Pills begs to remind Chemists and Patent Medicine Vendors that they incur no liability in selling them; being a *bona-fide* Proprietary Medicine, properly stamped, they are exempt from legal interference under the "Sale of Food and Drugs Act." Moreover, they contain Castor Oil, they are labelled "Compound," and their compound nature is expressly stated on the circular round each box. They may, therefore, be confidently recommended when Castor Oil Pills are asked for.

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Used extensively in Great Britain, India, Australia, America, and the Continent.

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"Nov. 19, 1879.—Sir,—The Pill Machine answers perfectly, we therefore send cheque which please acknowledge.—Yours faithfully, H. THORNTON & SON, Bishop Auckland."

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Turns out One Pound of Pill Mass in perfect Pipes in 3 Minutes.

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This little Machine is worked with the ordinary Counter Pill Machine, and as no weighing or rolling out of the mass is required, the saving of time is very great and manifest. It may be inspected, and its practical working shown, at Mr. CASSIE'S 49 Newgate Street, London.

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Machines made to order, as Pipes and Cutters only; or to match any given size of Pill, when either the Piping or Cutting parts are not required.

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A NON-MERCURIAL LIVER MEDICINE, specially useful to the habitually constipated, and safe for all ages.

Worthy of trade notice. Reliable, and rapidly increasing in public acceptance.

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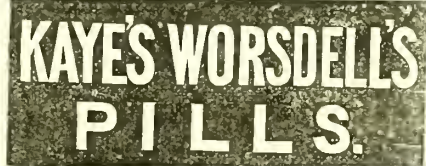
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They Purify the Blood thoroughly, and are a mild but effectual aperient. They cure Indigestion, Headache, Constipation, Rheumatism, Dyspepsia, Gout, &c.

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Have the Largest Sale of any Medicine in the World.

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For Wholesale Terms see List of "Proprietary Articles" in most Price Currents.

Index to Advertisements,

Pages 21, 22.

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A PERMANENT cure for Neuralgia, Rheumatism, Rheumatic Gout, Lumbago, Sciatica, Faceache, and all pains in the Limbs.

This NEW HERBAL EXTRACT (of Persian origin) is now acknowledged to be a most important discovery in Medicine, for not only has its efficacy been proved in relieving in a short time severe and long-standing NEURALGIC and RHEUMATIC pains, but also in PERMANENTLY removing the same, and completely ridding the system of the disease, a result hitherto unknown in such maladies. "Koptica" has thus proved itself in hundreds of cases, and appended are copies of some of the latest testimonials received, sufficient to further establish these facts. This NEW extract has many other advantages deserving of attention, and one in particular, which should be considered by the sufferer, is, that it is warranted FREE from Colicium, Belladonna, Henbane, Aconite, and all other injurious drugs and ingredients, and can therefore be taken by the most delicate with the greatest confidence that it is thoroughly harmless. Too much cannot be said in favour of its wonderful specific qualities, which have as perfect control over severe and chronic cases of long duration as over those of recent date. Severe attacks of facial Neuralgia have been permanently cured within twenty-four hours, and the most inveterate cases of Rheumatic Gout invariably give way to a very short treatment. "Koptica" is almost tasteless and easy to take, causes no derangement of the digestive or other organs, and no alteration in diet necessary. In cases of low nervous depression and other minor maladies it has also proved most successful.

COPIES OF TESTIMONIALS.

Please note Names and Addresses.

Cambridge Park House, Twickenham, December 15th, 1881.

Messrs. SQUIRE, FOX & Co.—Gentlemen,—I have much pleasure in informing you that I have taken two bottles of "Koptica," and it has perfectly cured me of Chronic Rheumatism. I have occasionally been so bad that I could hardly lift my arm.—Yours truly, C. HERITAGE.

2 Eagle Place, Piccadilly, December 15th, 1881.

GENTLEMEN,—After suffering many months of most dreadful pain from Acute Rheumatism, I was persuaded to try your "Koptica," which has given me the greatest relief. I am now quite recovered, and have recommended it to the use of my friends.—Yours very truly, (Miss.) E. TUCKER.

3 Buckingham Street, St. James's Park, S.W., June 19th, 1881.

SIRS,—I can certify, after suffering twelve months from Rheumatic Gout, that I am gradually getting much better from taking your "Koptica." The swelling has gone down greatly, and I feel my hands nearly well. I shall continue to take it, and thoroughly recommend it to all my friends. I remain, Sirs, Yours respectfully,

To Messrs. Squire, Fox & Co.,
Bloomsbury Mansion, London.

Mrs. JOSEPH SIMMONS, of Lancaster House, Clifton Gardens, W., writes, under date of October 5th, 1881, that her Neuralgia is very much better, and that she has recommended "Koptica" to many of her friends.

* * * We are constantly receiving letters from all parts of the Kingdom bearing testimony to the very great benefits derived from KOPTICA.

Chemists, &c., should procure it at once, as it is now extensively advertised.

Sold in very neat small pink packets at 2s. 3d. and 4s. 6d.

1 doz., 1/2 doz., and dozens packed in outers.

Terms and prices from SQUIRE, FOX & Co., Bloomsbury Mansion, London.

LIQUOR BISMUTHI SCHACHT

Dose, 5j., diluted.

Great pains are taken to ensure the absolute purity of this preparation. It is not only freed from the ordinary contaminations of the metal, such as copper, arsenic, silver, &c., but that which so frequently causes an offensive odour to pervade the persons of those taking the ordinary preparations of Bismuth, namely Tellurium, is also most carefully eliminated.

SYRUPUS CINCHONÆ ALCOHOLICUS, SCHACHT.

Bark minus the woody fibre Dose, 10 to 30 drops, diluted.

LIQUOR RHAMNI FRANGULÆ, GILES.

A real aperient, mild and constant. Dose, 5ij. to 5iv., diluted.

SYRUPUS SENNÆ AROMATICUS, GILES.

Made by cold maceration—does not gripe. Dose, 5j. to 5ij.

EXTRACTUM CINCHONÆ LIQUIDUM, GILES.

Exhausted entirely with cold water, and prepared by a process specially devised to avoid the changes inseparable from prolonged evaporation.

Dose, 10 to 20 drops, diluted.

The above Preparations are manufactured by Mr. Schacht himself in the laboratory of the firm.

GILES, SCHACHT & CO.,
52 Royal York Crescent, Clifton;

And can be procured from all Wholesale Druggists in London and the Provinces.

A CERTAIN CURE FOR DEAFNESS.

By this valuable "Specific" hundreds have been cured of this distressing malady. For Cold in the Head with Noises in the Ear, it is most efficacious. The highest testimonials are enclosed, with directions for use with each bottle.

OSBORNE'S
GOLDEN DROPS
FOR DEAFNESS.



The highest Testimonials are enclosed, with directions for use with each bottle.

Extract from "Brief"—"GOLDEN DROPS FOR DEAFNESS.—E. M. Osborne has produced a valuable specific for this distressing complaint. We have tested its efficacy, and can, with confidence, recommend it to the public as an excellent remedy. It is perfectly harmless, and the directions for use are plain and simple. It is secured by a registered trade mark, 'Human Ear,' by which the genuine article may be recognised."

TESTIMONIALS.

"EDGBASTON, MAY 4, 1877.—Sir,—My niece, who came to stay at my house, was suffering from Deafness and difficulty of breathing, owing to weakness of the tonsils caused by Quinsy. She tried your wonderful 'Specific,' and after applying it a little more than a week her hearing and breathing were quite restored. I am glad to communicate this as the medium of personal thanks and for the good of others.—Yours truly, C. L."

"CLAPHAM, SEPT. 5, 1877.—Sir,—Be so good as to send me six bottles of your 'Cure for Deafness,' and you will oblige. I am much better. Shall go on with it? Be so good as to let me know. It has done me more good than physicians to whom I have paid twenty guineas; they cannot do me any good.—Yours, &c., J. P."

"CRYSTAL PALACE ROAD, EAST DULWICH, JUNE 10, 1878.—Sir,—During the last few weeks my little girl has been quite deaf, and suffering considerable pain in her left ear. I was recommended to use your 'Golden Drops for Deafness,' and I am delighted to say that, after applying them three times, they brought away two large secretions of foul matter. The child can now hear distinctly the faintest sounds, and is free from pain. I send you this testimonial unasked, in the hope that its publication may increase the sale of your truly valuable 'Golden Drops.'—Yours respectfully, L. H. B. N."

—If you will send me some testimonial sheets I will distribute them amongst my friends."

Sold by all Wholesale and Retail Chemists, price 1s. 1/2d., 2s., 2s. 9d., and 5s. 6d.; or free by post for 1/2d. extra from

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THE ORIGINAL AND ONLY TRUE.

Discovered and Invented by **RICHARD FREEMAN** in 1844.

It is one of those preparations so well known as having something in its composition which defies the imitator, and makes an invaluable remedy. No other remedy known can be exhibited with so much confidence as a **SEDATIVE**, an **ANTI-PHLOGISTIC**, an **ASTRINGENT**, an **ANODYNE**, or **DIAPHORETIC**.

In its composition and effect it bears no resemblance to any of the many formulæ published, but has curative and chemical properties peculiarly its own, nor is there any analytical test for it. It has been found by the Profession and large numbers of the public to succeed after all imitations had failed, and maintains its unaltered position as the only reliable **CHLORODYNE**.

TESTIMONIALS.

Dr. J. FREEMAN,
Dear Sir,—It is with much pleasure that I am able to state that your Chlorodyne has been of special service to me in alleviating the wearisome spasms of Cholera, which is here existent in an aggravated form. Many of my patients now come and beg me to give them that medicine which always relieves them, and which I need hardly say is your Chlorodyne.
Yours faithfully,

CHARLES W. OWEN, L.R.C.P., Lon., M.R.C.S., Eng.
The Divisional Head Quarter Staff and Civil Surgeon, Cabul.

THE "TIMES," AUGUST 13th, 1877.

From our own Correspondent with the Russian Army.

OKOUM, July 25th, 1877.

The want of sanitary arrangements in the Russian camp was dreadful, and had we remained there a few weeks longer dysentery and typhoid fever would have played more havoc in our ranks than the bombs of the Turks. I myself acquired an unenviable reputation as a doctor, owing to my being provided with a small bottle of **CHLORODYNE**, with which I effected miraculous cures.

IMPORTANT CAUTION.—Four Chancery Suits terminated in favour of **FREEMAN'S ORIGINAL CHLORODYNE** and against **Collis Browne and Davenport**. Lord Chancellor Selbourne, Lord Justice James, and Lord Justice Mellish condemned their proceedings, and decreed them to pay all costs. Reports of the suits in "Times," January 12 and July 13, 1864, and April 29 and July 24, 1873, and "British Medical Journal," July 3, 1873.

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THE BEST NERVE TONIC.
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TOOTHACHE
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A NOVELTY.

Gives instant ease and destroys the nerve without pain.

ONE DOZEN ON A CARD.
RETAILS at 6d.

TERMS—
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One Gross and upwards
Carriage Paid.

PROPRIETOR,
WALTER GREGORY, Chemist, BRISTOL.

RELIEF FROM COUGH IN TEN MINUTES.

HAYMAN'S BALSAM OF HOREHOUND



Is the most certain and **SPEEDY REMEDY** for all **DISORDERS** of the **CHEST** and **LUNGS**. In Asthma and Consumption, Bronchitis, Coughs, Influenza, Difficulty of Breathing, Spitting Blood, Whooping Cough, Hoarseness, Loss of Voice, &c., this Balsam gives instantaneous relief, and, a properly persevered with, scarcely ever fails to effect a rapid cure. It has now been tried for many years, has an established reputation, and many thousands have been benefited by its use.

IT HAS A MOST PLEASANT TASTE.

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Mr. HOREHOUD, Chemist, Mildenhall, writes to say:—"One of my customers says your Balsam is worth sixpence a drop."

IN THE NURSERY it is invaluable, as children are fond of it and take it eagerly. Immediately it is taken coughing ceases, restlessness is gone, and refreshing sleep ensues. No lady who has once tried it would ever afterwards be without it.

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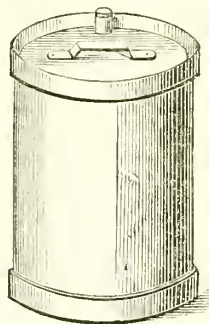
WHOLESALE AGENTS.—**W. Sutton & Co.**; **Barclay & Sons**; **Newbery & Sons, &c., London**; **Felton, Grimwade & Co., Melbourne**; **Robt Brothers, Sydney and Brisbane, Australia**; **Kempthorne, Prosser & Co., Auckland and Dunedin, New Zealand**; **Smith, Stanistreet & Co., Calcutta.**

THE NEW SEAMLESS TIN BOXES,

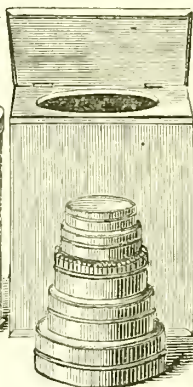
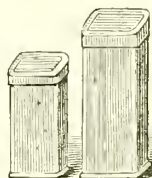
In Crystallised, Decorated, or Plain Tin Plates, suitable for Blacking, Polishing Paste, Tooth Powder, Plate Powder, Pomade, Lozenges, &c., &c.

SPICE AND BISCUIT BOXES, COFFEE, MUSTARD, AND POWDER CANISTERS.
LIQUID PAINT TINS, &c.

C. SMITH & SONS, ARUNDEL WORKS, SHEFFIELD
W. B. WILLIAMSON & SONS, Providence Works, WORCESTER.



MANUFACTURERS OF
TIN CANISTERS to hold
Coffee, Mustard, Tobacco,
Snuff, Biscuits, Jam, Con-
fectionery, Paint, and every
other description of Dry
or Fluid Material.
Also Oil Bottles,
Oil Cans, Cisterns,
&c.



PROPRIETORS OF
The PATENT for making
PAINT TINS with LEAD
TOPS.

Names, &c., of Customers stamped
on covers of Tins if desired. Oil Bottle
Price Lists can be forwarded
on application. In writing
for quotations for Canisters,
please state size and pro-
bable quantity required.



BOWLING & GOVIER

(Late Partners with FILMER KIDSTON),

MEDICAL SHOP FITTERS & CASE MAKERS.

Our friends are kindly requested to notice our REMOVAL to New Workshops, where alone our Special Class Manufacture can now be obtained.

THE ART JOINERY WORKS,

22 GUN STREET, BRUSHFIELD STREET, BISHOPSGATE, LONDON.

W. S. YATES,

Chemists' Shop Fitter, Shop Front Builder,
and Glass Show Case Maker.

DENTIST CASES.

PLANS AND ESTIMATES SUPPLIED FOR WORK IN ANY PART
OF THE KINGDOM.

9 CAMDEN STREET, LIVERPOOL.

TINFOILS,

METAL CAPSULES
VEGETABLE PARCHMENT.

C. F. BROWN & CO., 3 Tower Royal, LONDON, E.C.

NON-IRRITANT IODINE FOR INTERNAL USE.

GARDNER'S UNALTERABLE

SYRUP OF HYDRIODIC ACID

[Syrupus acidi Hydiiodici (Gardner).]

In this preparation the Hydiiodic Acid is perfectly protected against
decomposition.

The solution possesses all the therapeutic powers of Iodine without its
irritating properties.

Prepared by ROBERT W. GARDNER, Pharmaceutical
Chemist, 170 William Street, New York.

Sold in 1 lb. Bottles at 5/3, less usual discount.

Sole Wholesale Agents—W. H. SCHIEFFELIN & CO.
New York

AGENTS FOR GREAT BRITAIN:—

ALLEN & HANBURY, Plough Court, Lombard St., London.

LLOYD RAYNER'S

£75 CHEMIST'S SHOP

FITTED COMPLETE WITH ALL NEW GOODS,
INCLUDING

GLASS SHOW CASES, SHOP BOTTLES, JARS, &c.

If for Export, suitable for any climate, including
Packing Cases, and delivered to any of the
London Docks, free, £85.

The above Fittings are suitable for a Shop
14 feet long by 12 feet wide.

WHOLESALE AND RETAIL DRUGGIST'S, SURGEON'S,
AND DENTIST'S VALUER.

An Extensive Stock of Chemist's, Surgeon's, Dentist's, Grocer's
and other Trade Fixtures, Office Fittings, Utensils, &c.
ALL KINDS OF FIXTURES BOUGHT OR TAKEN IN EXCHANGE.

SHOW ROOMS AND OFFICES—

333 KINGSLAND ROAD.

FACTORIES—

2 DOWNHAM ROAD, KINGSLAND;

AND

WHITMORE ROAD, HOXTON, LONDON, N.

GEORGE TREBLE & SON,

Druggists' Shops Fitted and Furnished complete with
Fixtures, Bottles, Jars, Carboys, and
Spele Jars by contract.

Plan and Estimates
supplied.

DRUGGISTS' SHOP FITTERS BY CONTRACT.

OFFICES—
72, 74, 76, 78, & 80 CRONDALL STREET.

Steam Works—

44, 46, 48, 50 & 52 WHITMORE RD., & BRIDGE WHARF, REGENT'S CANAL,

HOXTON, LONDON, N.

Agents—S. MAW, SON & THOMPSON, 7 to 12 ALDERSGATE, CITY.

W. J. LEMAITRE & CO.,

OF 66 PENTONVILLE ROAD, N.,

Medical Shop Fitters and Show Case Makers,
HAVING PURCHASED THE WELL KNOWN BUSINESS AND STOCK OF

FILMER KIDSTON,

Offers the whole of his well-made and seasoned Stock of

SHOP FITTINGS, SHOW CASES, SHOW JARS, CARBOYS, &c.,
Including the KIDSTON'S HANDSOME

PRIZE DISPENSING COUNTER,

At a Great Reduction for Cash, to make room for New Goods, at the Show Rooms,

DIKE STREET, BRUSHFIELD ST., BISHOPSGATE ST., LONDON.

R. TOMLINSON,

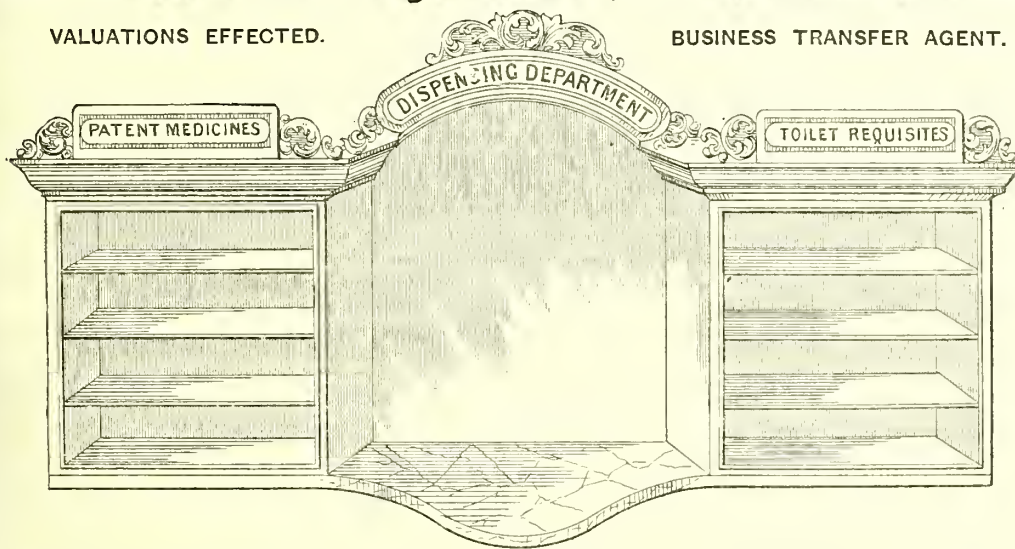
DRUGGISTS' SHOP-FITTER, SHOW-CASE MAKER,

AND MANUFACTURER OF DRUGGISTS' SUNDRIES,

11 St. PAUL'S SQUARE, BIRMINGHAM.

VALUATIONS EFFECTED.

BUSINESS TRANSFER AGENT.



For Export or easy transit it is admirably adapted, as it strikes to pieces, and can be fixed again in an hour. Packs into a Case 34 by 36, at a cost of 10s., 3s. of which is allowed if the empty is kept, and the full value allowed if returned carriage paid. Price, £8 10 c.

Second-hand Fixtures for Sale, Jars, Globes, Drawers, Bottles, Counter Glass Cases, Shelves, &c.

SECOND-HAND FIXTURES OF ALL KINDS BOUGHT AND EXCHANGED.

FT. will wait upon parties fitting up, to plan and advise. 2nd-class fare only charged.

FOR SALE, FIXTURES OR SHOP ABOUT SIXTEEN FEET BY TWELVE. WRITE FOR LIST.

This Case is made of choice Mahogany, with Mirror in centre, and shelves, glass doors for the "Toilet" and "Patent Medicines" fitted with Three Shelves at back. The Case is 6 feet long, 29 inches to cornice, 33 inches to top of tablets, and 36 inches to top of centre mirror.

HORSE, CATTLE, AND SHEEP MEDICINE.



By Special Warrant,
Dated 27th December, 1865.

BY ROYAL APPOINTMENT.



By Special Warrant
Dated 10th February, 1865.

DAY, SON & HEWITT,

INVENTORS AND SOLE PROPRIETORS OF THE

"ORIGINAL" STOCK BREEDERS' MEDICINE CHEST.

For all Disorders in Horses, Cattle, Calves, Sheep, and Lambs.

Patronised for over 40 years by Royalty, and the principal Stock Breeders, Horse Proprietors, and Agriculturists of the British Empire.

The No. 2 MEDICINE CHEST contains the following matchless remedies:—

- "CHEMICAL EXTRACT," for all External Injuries, and Ewes Lambing.
- "GASEOUS FLUID," for Colic, Scour, or Diarrhœa, and Debility.
- "RED DRENCH," for Cleansing Cows and Ewes, and for Inflammation.
- "RED PASTE BALLS," for Mares after Foaling, and Conditioning Horses.
- "BRONCHOLINE," for Husk or Hoose in Sheep, Lambs, and Calves.
- "GASEODYNE," for Heaving and Paining, "CARMINATIVE CHALK," &c.

Price of Chest, with Guide to Farriery, £2 16s. 6d. No. 1 Complete Medicine Chest, in Polished Case, £6 6s. Horsekeeper's Chest, No. 4, £2 17s. 6d.

CARRIAGE PAID TO ALL PARTS OF THE BRITISH ISLES.

Admirably adapted for all ordinary ailments among Stock, and each preparation can be had separately. Full and easy directions enclosed.

Awarded "Certificate of Merit" by the National Agricultural Society of Victoria, Australia, 1871; President's Medal, Spalding, 1872; 8 Medals, Manchester and Salford Show, 1874; Silver Medal, Preston, 1875; Silver Medal, Northamptonshire Agricultural Society, Stamford, 1875; Silver Medal, Cheshire Agricultural Society, Crewe, 1875; Special Prize, National Agricultural Society of Victoria, Australia, 1875; Medal, Ohio Agricultural Society, Chester, 1876; Silver Medal, South African Exhibition, Cape Town, 1877; Silver Medal, Northumberland Agricultural Society, Newcastle-on-Tyne, 1877; Silver Medal, Knutsford, 1878; Medal, North Berwick, 1878; Medal, Dairy Show, London, 1878; Silver Medal, Derby, 1878; Silver Medal, Wellingborough, 1879; Medal, Benthams, 1880; Medal, Melbourne Exhibition, 1880; and Silver Medal, Stourbridge, 1881.

CAUTION.—Beware of Imitations, and see that the name of DAY, SON & HEWITT is on all Bottles and Packets.

Prepared only by DAY, SON & HEWITT, 22 DORSET STREET, BAKER STREET, LONDON,

And sold by Messrs. Burgoyne, Burhidges & Co., Barclay & Sons, W. Edwards, Newbery & Sons, Sanger & Sons, and all Wholesale Druggists, in London; Hood & Co., Melbourne; Kempthorne, Prosser & Co., Dunedin and Auckland; Fairthorne & Co., Lancaster.

HORSES.—LIEUT. JAMES'S BLISTER.

(Manufactured by R. J. JAMES, the Grandson of the Inventor).

This celebrated Blister is now offered to the Trade at the following reduced prices:



1 oz. pots from	14/- per doz. to	12/6 per doz.	1/2 lb. pots from	£4 4 0 per doz. to	£4 0
2 " "	£1 5 6 "	£1 3 0 "	1 " "	7 16 0 "	7 10
4 " "	2 8 0 "	2 4 0 "			

Observe the Trade Mark.—"A Horse's Head on the top of each Pot, and the signature, R. J. James."

Wholesale Agents, BUTLER & CRISPE, 4 Cheapside; NEWBURY, 37 Newgate Street; MAW, SON & THOMPSON, 11 Aldersgate Street; HAYES & CO. Dublin; GOULDING, Cors; FOGGITT, Thirsk; and SANG & PARKER, Edinburgh. Agents for the Colonies required. Apply, with reference, to R. JAMES, 15 Union Bank Buildings, Ely Place, London, E.C.

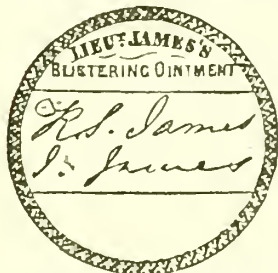
JAMES v. JAMES.—LORD ROMILLY, the Master of the Rolls, on February 23, 1872, declared "that I had an equal right with other members of the Inventor's family possessing the receipt to make and sell this Blister."—R. J. JAMES.

ESTABLISHED 1833. HORSES.—LIEUT. JAMES'S BLISTER.

CAUTION.

The annexed Label is at the top of every Pot of the ORIGINAL and only GENUINE BLISTER.

The Messrs. Barclay & Sons, 95 Farringdon Street, London, and Messrs. Raimes & Co., Edinburgh, Liverpool, and York, are now and have been Agents 45 years.



AGENTS:—Sutton & Co., 10 Bow Churchyard; W. Edwards & Son, 157 Queen Victoria Street; Newbery & Son, 37 Newgate Street; Evans, Lescher & Evans, Bartholomew Close; Burgoyne, Burhidges & Co., 16 Coleman Street; Lynch & Co., 171A Aldersgate Street; W. Mather, Farringdon Road, London, and Manchester; Tidman & Son, Wilson Street; Sanger & Son, 150 Oxford Street; Millard & Sons, 40 Charterhouse Square; Corry & Soper, Shad Thames; A. A. Campbell, Leadenhall Street, London; Woolley, Sons & Co., 53 Market Street, Manchester; Apothecaries' Company, Virginia Street, Glasgow; Boileau & Co., Bride Street, Dublin; McMaster & Co., 121 & 122 Capel Street, Dublin; Hunt & Co., 17 Westland Row, Dublin; Clarke & McMullen, Victoria Street, Belfast; D. Galbraith, Londonderry. And by all Chemists, in Pots, 1/6, 2/3, and 5/.

COLONIAL AGENTS:—MELBOURNE and WELLINGTON: Felton, Grimwade & Co.; SYDNEY, BRISBANE, and LAUNCESTON: Elliott Bros. & Co.; DUNEDIN and AUCKLAND: Kempthorne, Prosser & Co.; CALCUTTA: Smith, Stanistreet & Co.

W. H. JAMES, Sole Manufacturer, STANFORD, FARINGDON, BERKS
Advertised in "Bell's Life" 45 years. Beware of Spurious Imitations.

CATTLE MEDICINE.

ESTABLISHED MORE THAN FIFTY YEARS.

CORNER'S PINE'S DEVONSHIRE OILS.

For Outward and Inward Application, is the best and cheapest remedy for any ailment Stock is liable to, and no stable, garrage, or shepherd should be without them.

In Sheepshearing, for Cuts, Sores, or Sprains.

Lambing.—Invaluable to the Shepherd during Lambing, for Cold Inflammations, Cleansing, Udder-ill, Scour, &c.

For the Fly and Maggot in Sheep.—Nothing can surpass the value in summer for healing the worst Sores caused by the Fly, at the same time invigorating the growth of Wool.

Cattle and Horses.—As an Embrocation or Drench for Bruises, Swellings, Sprains, SWOLLEN UDDERS of Cows, the Sour in Calves, Internal and External Inflammations, Butts, &c., Wounds or Galls of any kind, WIFE SIZE, 2s.

Sole Proprietor, RICHARD CORNER,
WELLINGTON, SOMERSET.

* * * Anyone sending an article purporting to be PINE'S DEVONSHIRE OILS, without his Signature on the Bottle, will be prosecuted at law.
Supplied by all Wholesale Houses, of whom Bills, Posters, and Show Cards can be had.

SCOUR IN LAMBS CURABLE BY

THE DEVONSHIRE COMPOUND.

This Preparation has not been equalled for its immediate effects in checking this fatal disease in Lambs, and is quite a DIFFERENT PREPARATION to the Devonshire Oils. In Bottles, 2s. each.

TESTIMONIAL.

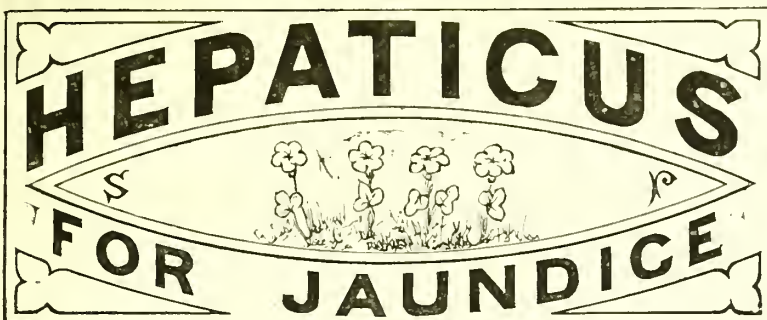
"DEAR SIR,—The DEVONSHIRE COMPOUND you sent me I have used in six cases of Scour in Lambs, with complete success in each case; I therefore think it a useful medicine, having lost fifteen Lambs before I used the compound."—I remain, Sir, your very truly,
Mr. R. Corner, Wellington.

Tedburrow, Hemstock, Oct. 23, 1901.

JOHN FARRANT.

THE WONDERFUL HEALTH RESTORER!

Biliousness.
Indigestion.
Weakness.
Sick Head-Ache.
Loss of Appetite.



Nervous and
Dyspeptic
Affections.
General Debility
Spasms,

AID ALL COMPLAINTS ARISING FROM A DISORDERED LIVER!

It quickly cures the above disorders of however long standing, PURIFIES AND CLEANSSES THE BLOOD, and gives to the system a healthy tone. NO CHANGE OF DIET IS REQUIRED. Those with weak constitutions may take it with entire confidence, it being adapted to all ages of either sex.

Sold in Bottles 2s. 9d. each.

In all Countries this Medicine is invaluable, but more particularly so in the Tropics, India, and all Hot Climates, and we particularly call the attention of Shippers and our friends in the Colonies and Abroad to it.

For Terms apply to the Proprietors,—**TOMLINSON & HAYWARD, Lincoln, England.**

Trade Mark "Hepaticus for Jaundice" and an Hepaticus Plant as illustrated above.

THE "GLYCERINE DIP"

IS THE BEST FOR SHEEP AND LAMBS. NON-POISONOUS.

An Infallible PREVENTION and CURE of SCAB, Effectually Eradicates TICKS or FAGS, RED LICE, INSECTS, and all other PARASITES infesting the Skins of Sheep and other Quadrupeds; Destroys MAGGOTS, renders the Skin Healthy after attacks by the FLY; it Cures and Prevents FOOT and MOUTH DISEASE, FOOT-ROT, and other Contagious Diseases; Heals RAW WOUNDS, and is especially useful as a DRESSING for CUTS during and after the process of SHEARING; Greatly Promotes the GROWTH of the WOOL, as also Increasing the Weight and Improving the Quality of the Fleece.

Can be used with Cold Water.

The "GLYCERINE DIP" is an excellent Wash for Horses (cures Harness Galls and Sore Backs), Cattle, and Dogs. Killing all Fleas and Curing all kinds of Skin Diseases and Sweetening the Skin.

GLYCERINE DIP

None is Genuine unless bearing this
Trade Mark.

Sold in Tins of 5 lbs. and 10 lbs., and
Drums of 20, 30, 40, 50, and 100 lbs.

Price 6d. per lb.

1 lb. for every 5 Sheep or 6 Lambs.

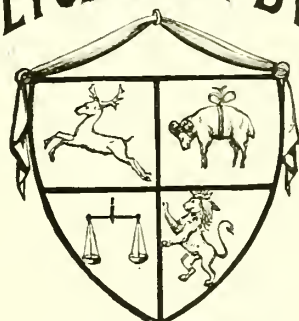
BEWARE OF IMITATIONS & FALSIFICATIONS.

CAUTION.—We have the sole right and Proprietorship of this Title and Mark, and we shall at once commence actions against any person or persons imitating, or otherwise pirating them, and we beg to caution Merchants and Buyers against such imitations.



TRADE MARK.

GLYCERINE DIP



TRADE MARK.

SOLE PROPRIETORS AND MANUFACTURERS,

TOMLINSON & HAYWARD, Lincoln, England.

TESTIMONIAL from NICHOLAS LOWE, Esq., ALTAMIRA, Mercedes, Buenos Ayres, October 22, 1880.

To Messrs. MOORE & TUDOR.—In reply to your letter of the 18th, I am thankful for your congratulations on the sale of my wool at \$135 per ar. I have sold another lot at \$140, and I attribute the success of placing wool worth these prices in market to having cured the flocks of Scab. There are several remedies more or less efficacious and cheap. I use only the "Glycerine Dip" imported by you, and I am well satisfied with the result it gives. I have no objection to your making the fact public. My neighbour, Mr. William Cleary, also uses the "Glycerine Dip," and he obtained a Silver Medal Prize, at the Paris Exhibition of 1878. Several others who use the same Dip are satisfied with it, and promise to continue patronising the "Glycerine Dip."

Applications for Agencies invited in those countries where we are not already represented.

MITCHELL v. CONDY.

(The Partnership Accounts of the late Firm of Bollmann Condry & Co

HIGH COURT OF JUSTICE, CHANCERY DIVISION, 16th Dec., 1881.

Vice-Chancellor Sir James Bacon made an order upon
H. BOLLMAN CONDY (Defendant), **TO PAY** into Court
THE SUM OF £3,602. 4s. 6d. being the amount
 of his indebtedness to the late Partnership.

N.B.—The "Contempt of Court" alluded to in a certain distorted statement, at present being advertised under the heading "Condy v. Mitchell," was the publication by the Plaintiff (Mitchell), in the year 1873, of Accounts of the Defendant relating to the above suit (Mitchell v. Condy), which was then commencing, and had no connection with Condy v. Mitchell, under which heading it is made to appear.

THE CONDY'S FLUID CO. (Estab. 1874)
 REPRESENTING THE PLAINTIFF.

SPRATTS PATENT MEAT "FIBRINE" DOG CAKES & POULTRY MEAL DOG MEDICINES AND DOG SOAP.

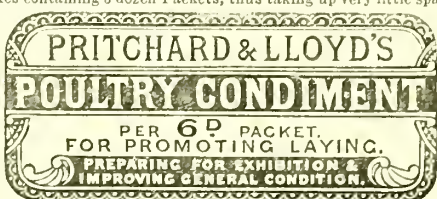
TO CHEMISTS AND DRUGGISTS.

The above Goods have an enormous Sale. For Terms, address—
"SPRATTS PATENT," Bermondsey, S.E., or order through your Wholesale House

Wholesale Agents for the Soap and Dog Medicines:—Barclay & Sons; Sanger & Sons; Sutton & Co.; F. Newbery & Sons; Lynch & Co., London; Raines & Co., Edinburgh, York, and Liverpool; Ravensdale Mill Co., Dublin; Woolley, Sons & Co., Manchester; Taylor, Gibson & Co., Newcastle-on-Tyne; Goodall, Backhouse & Co., Leeds; and of all Wholesale Houses.

IMPORTANT TO CHEMISTS, DRUGGISTS & OTHERS.

Agents for Retailing the following Poultry Condiment wanted in every Town in the United Kingdom where none have already been appointed. CHEMISTS AND DRUGGISTS will find that the merits of this Article create for itself a rapid sale. Those who have already taken it up are frequently repeating their orders and increasing the quantities ordered. It is made up in neat SIXPENNY PACKETS, measuring 4 in. by 2½ in. by 1 in.; and again in Boxes containing 3 dozen packets, thus taking up very little space.



Wholesale Agents:—BARCLAY & SONS, 95 Farringdon Street, London, E.C.; WYLEYS, WALKER & CO., 223 Upper Thames Street, London, E.C.; WYLEYS & COMPANY, Coventry; EVANS, LESCHER & WEBB, 60 Bartholomew Close, London, E.C.; EVANS, SONS & CO., 56 Hanover Street, Liverpool. Or direct from the Proprietors,

PRITCHARD & LLOYD, 31 KING STREET, DUDLEY.

NOTICE.

IN consequence of the great reduction in all Patent Medicines, the Proprietor has determined to reduce the Wholesale Prices of following Articles, viz.

	Per doz.	Retail.
TAYLOR'S Condition Balls.....	24/-	3/-
Ditto ditto	12/6	1/9
TAYLOR'S Condition Powders	18/-	2/6
TAYLOR'S Cough Powders.....	18/-	2/6
TAYLOR'S Cleansing Drinks	5/-	(No retail price)
TAYLOR'S Foot Rot Mixture.....	7/-	1/-
Ditto ditto	14/-	2/-
Ditto ditto	28/-	3/6

Subject to the usual Discount.

Prepared by THOMAS TAYLOR, M.R.C.V.S., Derby.

CONDY V. MITCHELL.

(MITCHELL is the person now Trading as THE CONDY'S FLUID COMPANY.)

The Defendant having published certain advertisements in which judgments unfavourable to the Plaintiff in the above suit have been paraded, the following Extract from the Judgment of **Vice-Chancellor BACON** in respect to an issue arising out of the litigation is given as a contrast. Application was made to **COMMIT MITCHELL FOR CONTEMPT OF COURT**. According to the report of Mr. W. H. COUNSELL, shorthand writer, 24 Chancery Lane,

THE VICE-CHANCELLOR SAID:—

“With respect to MITCHELL, there is not a shadow of excuse for what he has done; on the contrary, as might be expected, there has been a submission and an apology by him, accompanied by a protestation that ‘he did not think he was doing anything wrong.’ Therefore, in my opinion, so far as MITCHELL is concerned, it is an undefended case, only made worse by the sort of lame excuse which is offered, together with the apology, which I dare say is sincere enough, because a man, when he has done wrong, is always ready to give an excuse for what he has done when he is convicted.”

CHLORIDE OF LIME.

IN WATERPROOF, AIR-TIGHT, & ODOURLESS PACKAGES. Protected by Royal Letters Patent.
neat and clean, and convenient for use. Being air-tight and odourless, retains its strength unimpaired.

IT IS ADMIRABLY ADAPTED FOR EXPORT, AND WILL
KEEP FOR YEARS IN ANY CLIMATE. Per Box.

1-lb. BOXES, containing 24 1-lb. Packages	.....	6 6
Ditto ditto 48 ½-lb. ditto	.....	7 0
Ditto ditto 96 ¼-lb. ditto	.....	8 0
Ditto ditto 1-lb., ½-lb., & ¼-lb., assorted	.....	7 3
Ditto ditto 1 Gross Penny Packages	.....	8 0
Per Case.		
1-lb. CASES, containing 50 1-lb. Packages	.....	13 0
Ditto ditto 10 5-lb. ditto	.....	13 0
Ditto ditto 100 ½-lb. ditto	.....	14 0
Ditto ditto 200 ¼-lb. ditto	.....	16 0
Ditto ditto 1-lb., ½-lb., & ¼-lb., assorted	.....	14 6

as in 1 cwt. and ½-cwt. Cases, to meet the requirements of large buyers and the Export Trade.

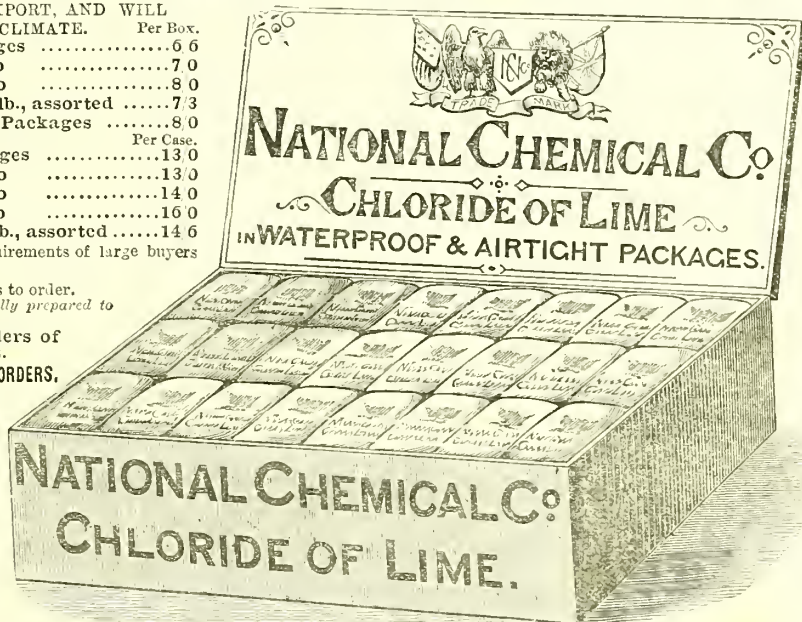
Packed also in Jars, Bottles, Casks, and Cases to order.
Patented Composition for Export Orders is specially prepared to bear any Climate.

Liberal Discount allowed on all Orders of
5 Cases or 10 Boxes and upwards.

SPECIAL QUOTATIONS FOR CONTRACT OR LARGE ORDERS.

WHOLESALE AGENTS.

London: S. Maw, Son & Thompson; Barclay
Sons; J. Newbery & Sons; W. Edwards &
Son; J. Sanger & Son; Lynch & Co.; Harvey,
Lepper & Co.; Evans, Lescher & Webb;
Burgoyne, Burdidge & Co.; Dury, Yates &
Outledge; Hovenden & Sons; Wright, Layman
Umney; Hearou, Squire & Francis; Hodg-
kinson, Stead & Treacher. Liverpool: Evans,
Sons & Co. Manchester: James Woolley, Sons
Co. Birmingham: Southall Bros. & Barclay.
York: Raimes & Co. Edinburgh: Raimes,
Lanchard & Co.



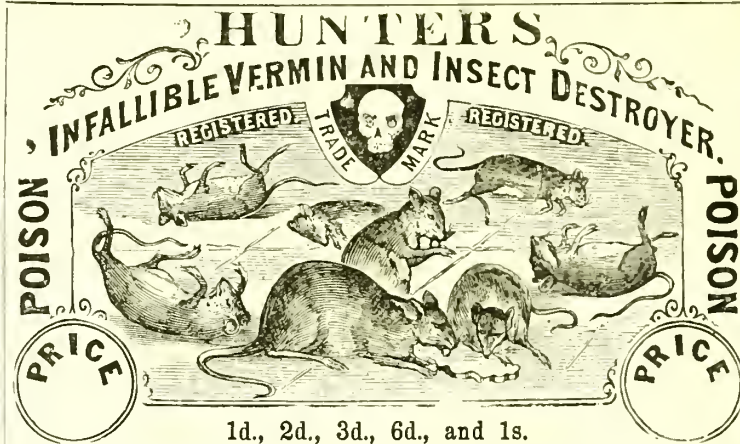
SAMPLE BOX OR CASE CAN BE HAD FROM ANY OF OUR WHOLESALE AGENTS OR ANY LONDON
OR COUNTRY WHOLESALE DRUGGISTS. ALL GOODS DELIVERED FREE IN LONDON.

NATIONAL CHEMICAL CO., 55 PITFIELD STREET, LONDON, N.

"HUNTER'S" INFALLIBLE VERMIN DESTROYER

"The Best Extant."

The enormous sale last year of this old-established article, and the few specimens of testimonials below, stamp it as undoubtedly "the best extant." It is very neatly and very carefully put up throughout, and is indeed a most satisfactory article in



Thirty-five years' Reputation.

every respect, proof of which lies in the fact of its having—although not constantly advertised—steadily maintained its reputation as such, ever since its introduction to the trade and the public, now about thirty-five years ago.

"CANNOT BE EXCELLED."

From Mr. Smith, Chemist, Glasgow:—"I have not kept any other Vermin Killer than yours for the last four years. It is the best I ever sold."

From Mr. Geo. Eagle, Merriekville, Sydney, Australia, to Mr. Mitchell, Druggist, Pitt Street, Sydney:—"Sir, I promised to let you know how 'Hunter's Vermin Destroyer' acted. Its effect was wonderful; in one night it destroyed all the rats and mice about my house, which was swarmed with them."

From Mr. A. Billington, Chemist, Wakefield: August 28, 1878:—"Dear Sir,—Please send me a few of your Vermin Killer Registers. I can bear testimony to the deadly effect of your 'Killer,' having one night laid in my warehouse the contents of a 2d. packet, and found in the morning no fewer than forty dead mice."

Kept in Stock by all the Wholesale Houses in the Trade throughout the United Kingdom. Vide Trade Lists, &c.

LABORATORY—WESTGATE & UNION STREET, DEWSBURY, ENGLAND.

BATTLE'S VERMIN KILLER. { Mice eat it readily, and Die on the spot.

Has an immense Sale, and wherever introduced never fails to give satisfaction. Mice appear attracted to it as by magic, eat it readily, tumble over, and die on the spot. Rats usually die in their runs. Parties troubled with Vermin may be cleared at once, either from Stacks, Houses, or Ships.

TESTIMONIALS.—Thousands might be published.

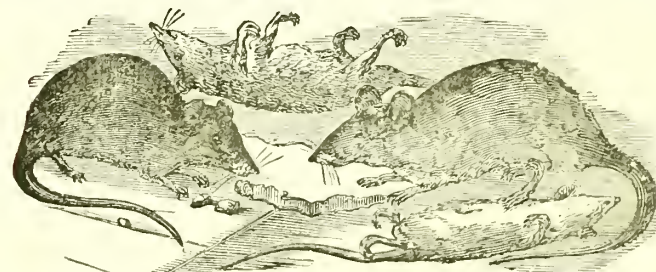
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DRY UP
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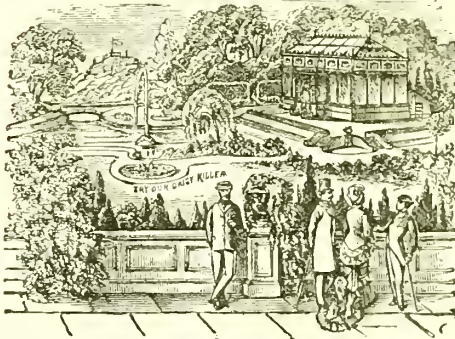
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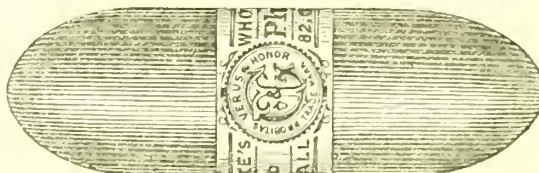
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